# FEEDSTUFFS®

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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## Universal Mills Becomes Part Of Allied Mills

CHICAGO—Allied Mills, Inc., this week announced the completion of negotiations for its purchase of Universal Mills, Inc., Ft. Worth. Negotiations have been under way for the past 30 days (Feedstuffs, Oct. 4).

The transaction was completed jointly by E. W. Lenz, R. R. Carlson and L. M. Bolitho, president, treasurer and secretary of Allied.

Mr. Lenz said that no immediate changes are contemplated in the operation of the Universal plant or sales organization and that present personnel would continue so far as possible. Plans are under way to aggressively promote and merchandise Universal's Red Chain brand of feeds in the area served by the Ft. Worth plant. The operation will be continued as Universal Mills, Inc., a subsidiary of Allied Mills.

The Allied firm, which manufactures Wayne feeds, set an all-time high tonnage mark for the fiscal year

(Turn to ALLIED MILLS, page 97)

## Arkansas Feed Firm Plans Poultry Plant

FT. SMITH, ARK.—Collier Wenderoth, Jr., president of O. K. Feed Mills, Inc., and also of O. K. Processors, Inc., Ft. Smith, has announced that the processing firm will build a poultry processing plant here.

Mr. Wenderoth said the steel and masonry building will be ready for business about March 1. The building will contain about 15,000 sq. ft. of floor space and will have a capacity of 24,000 chickens per day at the start with an increase expected later.

The plant will utilize an assembly line method of operation, and will receive live chickens at one end and will ship out processed fowl, ice packed, from the other. Officers of the processing firm include W. K. Smith, vice president; Edward Sharum, scretary, and Mose Smith, Jr., treasurer.

## *Plans Set for Cornell Nutrition Conference*

BUFFALO—The usual large crowd of nutritionists and other feed men is expected to converge on Buffalo Nov. 12 for the annual Cornell Nutrition Conference. The program will be presented Nov. 13-14 after registration the evening of Wednesday, Nov. 12.

The conference will be held at the Hotel Statler in Buffalo.

More than 20 animal and poultry nutrition authorities will present papers on various important and timely aspects of nutrition. The speakers will include Cornell staff members and several guest speakers.

The conference is sponsored by Cornell University, Ithaca, N.Y., in co-

(Turn to CORNELL, page 96)

## Grain Car Shortages Continue to Plague New Crop Movement

KANSAS CITY—Grain car shortages continue to plague movement of new crop sorghums and corn in the Southwest. The Association of American Railroads car service division has an order in force requiring movement of 1,300 cars daily from eastern lines to western carriers, but this allotment has proved inadequate.

Efforts to increase the number of cars moved under this directive have been unsuccessful, as movement of soybeans, corn and other seasonal commodities in eastern states has increased needs in that area also. Reconcentration of Commodity Credit Corp. stocks of old grains to make room for new harvests has added to the car tightness.

A considerable amount of grain sorghums has been piled on the ground in western Kansas, where it is vulnerable to rains. And, despite the large amount of new storage capacity built this year, space for grain still is scarce.

# Favorable Turkey Returns In 1958 Noted; Industry Sees Increased Production in 1959

By JOHN S. FRANKLIN
Feedstuffs Staff

Relatively favorable turkey margins in 1958 and an outlook for large feed supplies and available financing are expected to combine with "the perennial optimism of the turkey producer" to bring a significant increase in turkey production during 1959.

• • •

## *Bigger Number of Turkey Breeder Hens Expected*

WASHINGTON — Turkey breeder hen owners in 15 of the most important states expect to hold 7% more heavy breed hens and 38% more light breed hens at the beginning of the 1959 hatching season than they did a year earlier, according to an Oct. 1 survey by the U.S. Department of Agriculture.

These 15 states accounted for about 81% of the breeder hens in the U.S. on Jan. 1, 1958.

Compared with the 1957 season, breeder flock owners of heavy breeds expect to have 25% more heavy white turkey hens and 4% more bronze and other heavy breeds.

Growers indicated increases in

(Turn to BREEDER HENS, page 97)

## *Broiler Situation Looks Brighter*

SALISBURY, MD. — Things are looking up in the broiler business. Last week in Delmarva the price per pound for broilers increased nearly 1¢.

And nationwide, hatcheries in 22 major broiler producing states set 37,868,000 eggs. Although this was 12% more than the same week a year ago, there has been about this percentage of chickens above last year throughout 1958 and the demand has been good.

Further making the picture look a little better, broiler growers last week placed 25,611,000 chicks. This was 1% less than the previous week and only 9% above the same week a year ago.

The average price paid last week in Delmarva for chickens at the farm was 16.2¢ lb. A week earlier the price had sunk to 15.4¢.

Growers in Delmarva sent 4,047,000 broilers to market. The total sold was 1% less than the previous week but 29% more than the corresponding week of 1957. Delmarva farmers started 3,273,000 broiler chicks during the week, 6% more than the week earlier but 2% below the corresponding week of last year.

Unofficial estimates of the 1959 turkey crop are running from 3% to 10% more than 1958, feed industry experts and others associated with the turkey industry said this week. This would be a boost of 2.5 million to 8 million more birds than were raised in 1958.

U.S. Department of Agriculture estimates in August were that the 1958 crop would total about 78 million birds (4% less than in 1957). If the predicted 10% increase occurs in 1959, it will mean a 1959 crop of 85 million—a record high.

### More Breeder Hens

Trends within the industry are already showing what can be expected, observers said. One evidence of the trend was a USDA report this week showing the intentions of turkey breeder hen owners for 1959. Owners in 15 of the most important states expect to hold 7% more heavy breed hens and 38% more light breed hens at the beginning of the 1959 season than they did a year earlier. Their intentions show 25% more heavy whites, 4% more bronze and other heavy breeds. (See accompanying story.)

"We have plenty of evidence of this," one feed credit man reported. "Applications for breeder flocks are running very heavy. If there isn't a change soon, you can bet that there will be distress eggs and poults during the first part of the year."

### Settings, Hatch Up

Egg sets in the past several weeks have been running 50 to 87% over the same period a year earlier. The hatch has been up by about a similar amount. While this doesn't influence the crop greatly, because the hatch is down seasonally at this time

(Turn to TURKEYS, page 97)

**CHIEF—In case you didn't recognize him, the gentleman under all the feathers is Hugh Kelley, Ames (Iowa) Reliable Products Co. The two-feather brave with him is Ray Ammon, Quaker Oats Co., St. Joseph. To learn the new title bestowed on the chief, turn to page 8.**

## FEEDSTUFFS *Features This Week*

**RESEARCH PROGRAM:** How an eastern feed firm stresses the vital role of research in its development program is outlined on **page 10**.

**NEW PLANT:** A description of a new, highly-automated plant in Iowa may be found on **page 18**.

**SERVICE:** A swine nutritionist tells how service is essential for feed success in an article on **page 38**.

**TRANSPORTATION:** The sixth in a series of articles on linear programming tells how the system can be used to solve problems of transportation. See **page 62**.

**MERCHANDISING:** An article on **page 73** tells how good public relations can result in merchandising opportunities.

### — REGULAR FEATURES —


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EDITORIAL STAFF—George L. Gates, Editor; Roger Bergland, Managing Editor; John Cipperly, Washington Correspondent; Emmet J. Hoffman, Merchandising Editor; John S. Franklin, James E. Sharon and James H. Ross, Editorial Assistants; Duane F. McKenzie, Research Director.

WASHINGTON CORRESPONDENT—John Cipperly, 604 Hibbs Building, Washington, D. C., Telephone, Republic 7-8534.

ADVERTISING STAFF—Wilfred E. Lingren, Advertising Director; Carl R. Vetter, Advertising Department Manager; Bruce A. Kirkpatrick, Advertising Production Manager; Leland C. Hubert, Assistant Advertising Production Manager; R. Dale Swenson, Promotion Manager.

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BRANCH OFFICES—SOUTHWEST, Martin E. Newell, Manager; Thomas E. Letch, Assistant Manager, 612 Board of Trade Bldg., 1005 Wyandotte St., Kansas City 5, Mo. (Tel. Victor 2-1350); EASTERN STATES, Paul L. Dittemore, Manager; George W. Potts and James W. Miller, Advertising Sales Representatives, Suite 3214, 551 Fifth Ave., New York 17, N. Y. (Tel. Murray Hill 2-2185); CENTRAL STATES, Don E. Rogers, Manager; Henry S. French, Assistant Manager; Amos W. Standish, Advertising Sales Representative, 2832 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. (Tel. Harrison 7-0515); NORTHWEST, Paul A. Anderson, Advertising Sales Representative, P. O. Box 67, Minneapolis 40, Minn. (Tel. Franklin 4-5200).

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## A Partner in Progress

**THE RECENT GOLDEN ANNIVERSARY** convention of the Association of American Feed Control Officials provided a fitting opportunity for both control officials and industry representatives to call attention to the general spirit of cooperation and understanding which has developed between control and industry people. Many of the speakers, as they reflected on 50 years of progress, put particular emphasis on the mutually cooperative attitudes of the officials and industry.

Of course, both feed men and control officials have their problems, and the need for such things as greater uniformity in regulations is frequently noted. But, as was pointed out at the convention, the development of the AAFCO during its 50 years has shown steady progress toward more efficient feed control, and industry-control relations which have benefited feeders, control work and industry alike. In fact, it is doubtful that any regulatory group has worked more cooperatively and fairly with industry than has the AAFCO.

**ACCOUNTING FOR NOT JUST ONE** but a good many important cogs in the wheel of steady progress has been the man who has served as secretary of the AAFCO for well over half of its 50 years—Les Bopst of Maryland. Mr. Bopst is retiring from the secretary's office after 31 years of devoted service to the association, his fellow officials on both state and federal levels, the feed industry and the nation's animal agriculture.

As tribute was paid to Mr. Bopst at the recent convention, it was recalled that control officials once were policemen who sought out offenders and punished them. Then, some of the younger men in the association helped bring about a change in thinking. Les Bopst was one of these. He contributed immeasurably to the spirit of cooperation which exists today. He exemplified the idea of corrective law enforcement, which means being both firm and sympathetic to problems that arise.

In acknowledging the tributes paid to him, Mr. Bopst mentioned that service to others is "like rent for space on earth." If that be the case, he has contributed the rent on quite an acreage.

For this service, feed men will join Mr. Bopst's associates in control work in saying sincerely, "Thanks, Les."

## Protecting Plant Investments

**AS MOST EVERYONE IS AWARE**, new developments in nutrition, feed distribution and feeding practices are coming mighty fast these days—in fact, at a considerably accelerated pace. In many cases, people concerned with such things as sales, service, nutrition, financing and promotions will be adapting to the changes in order to keep their business progress "train" on schedule.

However, there is another phase of the feed business where, for some at least, there may be a danger of being left standing at the station while the train goes by. This is in the field of production, in mill facilities and operations.

From the local mill serving one county to the regional and national multiple-unit manufacturers, the changes in feeds, feeding methods and feed distribution patterns will be reflected in new or changed requirements in production and handling. For one thing, of course, the situation will demand continuing improvements in efficiency and cost control. In addition, there are the related tasks of adjusting to such things as changes in mill size or design, more critical feeds, more complete feeds, more pelleting, more bulk. Not to be alert to continuing developments, to opportunities for greater efficiency and savings, is to invite real problems in just staying on the right track, to say nothing about going ahead.

**NEARLY HALF A HUNDRED PRODUCTION EXPERTS**—on small mill as well as larger plant operations—will be in Kansas City soon to explain and demonstrate some of the latest production thinking, systems and facilities. The occasion is the annual Feed Production School, being held Nov. 12-14. It's an opportunity not only to be brought up to date, but to look ahead in production—and to help protect the present and contemplated investments every feed firm has in plant facilities and production personnel. The emphasis at the school will be on the timely topic of bulk handling costs, systems and problems. But the school also will deal with such things as pelleting, micro-ingredient mixing and liquid handling, plus operations of small local mills.

Feed men at past schools often have been heard to say that obtaining the answer to just one question has more than paid for the trip. Feed companies that want to make certain that they do not fall behind in their production and feed handling operations would do well to send a representative to the school.

## A FEEDSTUFFS FEATURE

## FORMULA FEEDS: HOW'S BUSINESS?

**Formula feed business continued to be somewhat spotty this week, but generally better than a year ago. Seasonal increases in dairy, beef and egg feed demand increased volume in some areas, while other areas reported a slow movement of cattle into feedlots. Fall farm work was also blamed as a deterrent to sales in some areas. Demand continues to be primarily for hand-to-mouth needs rather than inventories, but manufacturers are expecting some inventory building soon. The index of wholesale feedstuff prices for the week was 76.8, compared with 76.6 a week earlier and 73 a year earlier. The feed grain index for the week is 59.6, compared with 61.3 the previous week and 66.8 for the same week in 1957. (Ingredient price details on pages 94-96.)**

### Northwest

The seasonal increase in feed demand appeared to be on in earnest this week, feed mill representatives reported. All mills reporting showed an increase and one mill reported its best volume in the past 60 days.

Dairy and cattle feeds are moving more rapidly and appear to be making the difference. Hog feeds are still moving "surprisingly well" according to one representative, and egg feed demand is increasing.

The better feeling was credited primarily to a growing feeling that ingredient markets have leveled out along with the slowdown in fall field work on area farms. The drop in concentrate purchases which normally occurs during the fall harvest appears to be about over, the representatives said.

Prices for the coming week appear to be about stable. Feed mill running time is generally about the same as a week ago. One mill on a four-day week was back at five days, and order backlogs were generally good.

### Northeast

Feed manufacturers closed out the month of October with sales of formula feed steady with a year ago and somewhat above the previous month. In the final week of October, sales ran at a pretty good clip and mill running time held steady.

Dairy feeds were turned over in fair volume and demand for bran has increased from the New England area. Although there has been snow in some areas of this region, pastures as a whole are holding up pretty well.

Egg mashes accounted for the bulk of sales and turkey feeds still are going good. Broiler feed volume was just fair.

End products presented a mixed picture. Milk is showing a good return, and egg prices are generally good. But the turkey market is ragged and broilers are severely depressed.

Broiler prices in the East ranged from 14@14½¢ lb. to 16¢.

The ingredient market was nervous. Corn fluctuated from 5 to 8¢ lower at times, depending on farmers' ability to gain access to their fields. Oats held their own, barley rose 2¢ and feed wheat advanced 3¢.

Soybean meal (44%) was little changed, but 50% soybean oil meal declined $2. Linseed oil meal and cottonseed oil meal were about unchanged. Gluten meal held steady.

Supplies of fish meal were practically nil and meat scraps tended lower.

Resellers quoted distillers' grains $2 lower. Hominy feed was off 50¢ to $1. Brewers' grains, alfalfa meal and gluten meal were unchanged.

Millfeed sales were fairly good. Interest centered mostly in bran on demand from the New England area and parts of New York state.

Running time of formula feed manufacturers averaged 40 hours last week.

### Southwest

Formula feed sales continued generally good this week, although some mills reported a sharp slump in demand near the end of the week. Whether this was merely happenstance or indicative of a fundamental change will probably be revealed next week. Many feed sales managers feel that recent business has been seasonally very good and some averaging down is not unlikely.

Improved cattle feed movement was indicated by quite a few plants this week. So far, the good range conditions have depressed the level of cattle feed sales but some of the western sections now are getting colder weather and this has been reflected in buying interest.

Hog feed business continues good, with pig starter making some gains. Egg feeds have climbed in volume also, partly a reflection of shifting from grower and pullet feeds. On the downside turkey feeds have been losing seasonally and broiler feeds also.

Mill operations continued on a five and six-day basis at nearly all plants, with some mentioning that they were carrying over a good backlog for next week. Prices were unchanged early in the week, but following ingredient advances late in the week, formula feed price cards were marked up 50¢ to $1 in most instances.

### Central States

Formula feed prices continued their downward spiral during the week ending Oct. 29, and this affected the buying pace adversely. It is axiomatic that buyers tend to hold purchases to a minimum during periods of market softness, hoping to time their inventory building at the low point. Prices average around $1 ton lower.

Crop reports showing abundant feed grains and protein feeds seem to be responsible. Soybean oil meal dipped again this week. The number of livestock on feed forecasts heavier

(Turn to MARKETS, page 99)

# The Case of the Talking PIGS

## THE RESULTS OF THIS INDEPENDENTLY CONDUCTED TEST SPEAK FOR THEMSELVES

1. One to two pounds of SUCRO FLAVOR replaced 400 pounds of sugar
2. Saved $15 per ton of feed
3. Pigs on SUCRO FLAVORed feed made higher daily gains
4. Pigs ate more SUCRO FLAVORed feed—feed efficiency improved!

Pigs can tell you a lot about SUCRO FLAVOR . . . the sweet concentration of taste proven feed flavors, sweeteners and BHT antioxidant in soluble powdered form. It adds new appetite stimulating aroma and gives feed a fresh, long-lasting sweet taste. There is no objectionable after-taste common with ordinary saccharin. Appetite fatigue common with excessive amounts of plain sugar is eliminated.

The high palatability control of SUCRO FLAVOR was first proven in laboratory tests with small animals. Now independent control feeding tests and actual on-the-farm results give new proof of feeding performance.

Use 1 to 2 pounds SUCRO FLAVOR per ton of starter feeds; ½ to 1 pound per ton of grower and finisher feeds.

SUCRO FLAVOR makes better creep feeds, better starter feeds, better wormer and other medicated feeds, better high fat feeds, better mineral feeds, better sweet feeds. Makes old fashioned "high sweet" feeds obsolete.

Act now! . . . get all the important money saving, sales promoting facts on SUCRO FLAVOR. Send the coupon below for trial order at reduced price or FREE SAMPLE.

| 4 WEEK TEST ON 4 LOTS OF 3-WEEK-OLD PIGS | | | | | |
|---|---|---|---|---|---|
| | Average Starting Weight | Total Gain | Average Daily Feed Intake | Feed Per Pound of Gain | Average Daily Gains |
| Basal Ration | 17.8 | 23.7 | 1.30 | 1.53 | .85 |
| Basal Ration Containing 20% Sugar | 18.6 | 27.5 | 1.72 | 1.75 | .98 |
| Basal Ration Containing ½0% SUCRO FLAVOR | 17.3 | 27.1 | 1.45 | 1.49 | .97 |
| Basal Ration Containing ⅒% SUCRO FLAVOR | 17.9 | 31.1 | 1.67 | 1.50 | 1.11 |

***Conclusions from feeding experiment report by Laboratory of Vitamin Technology are as follows:***

"Under the conditions of this experiment, 3-week old pigs fed basal ration with sugar or Sucro-Flavor and raised on concrete showed better weight gains than those fed basal ration alone. Feed efficiency on Sucro Flavor was equal to that on basal alone, and better than that on sugar. Therefore, in one ton of pig starter ration, one or two pounds of Sucro-Flavor was found to be equivalent to or better than 400 pounds of cane sugar with respect to weight gain and feed efficiency."

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# USDA Starts Grain Transport Study In Midwest States

WASHINGTON—The U.S. Department of Agriculture is undertaking a survey of grain transportation in 12 midwestern states (Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, North and South Dakota, Nebraska, Kansas, Iowa and Missouri).

The study is being made at the request of the grain trade, and will provide a picture of what is taking place in grain transportation in that area.

The study is being done in two phases: Phase (1) will cover country and river elevators, and Phase (2) will cover terminal elevators.

The Commodity Stabilization Service is cooperating with the Agricultural Marketing Service in the handling of the first phase. The ASC office representatives are conducting the interviews with the country elevator operators. The terminal elevator interviews will be handled by AMS, which will assemble and analyze the data gathered from both the country and terminal elevators and will prepare a study on the basis of this information.

It is expected that about 2,000 country elevator operators and about 100 terminal elevator operators will be contacted in the survey.

The terminal elevator information will be provided by answers to questions on a questionnaire which will complement the information received from the country elevators.

**Participation Not Mandatory**

Participation by the grain companies is not mandatory. However, the success of the study will depend in large part on the assistance of all elevator companies, and the accuracy and completeness of the answers, the USDA said. All data will be confidential information.

Meeting to discuss the approved questionnaires with terminal and line house representatives have been arranged for Kansas City (Nov. 3), Wichita and St. Louis (Nov. 5), Peoria and Omaha (Nov. 6), Des Moines and Chicago (Nov. 7), Minneapolis (Nov. 10), Indianapolis (Nov. 11), and Saginaw (Nov. 13).

These meetings are being held to obtain necessary clearances for USDA personnel to contact line elevator managers, and to determine from where information requested in the questionnaires is to be obtained by interviewers.

On completion of these meetings, state ASC office personnel will be oriented, and the actual interviews will commence about Dec. 1.

Secretaries of the state grain and feed associations are assisting with the scheduled meetings and will assist in expediting this study.

## Vitren Sponsors Poultry Forum

POMONA, CAL.—To bring information to poultrymen and feed dealers who were unable to attend the recent California Animal Industry Conference, the Vitren Corp., Ontario, Cal., sponsored a Poultry Forum Oct. 22 on the campus of the California State Polytechnic College, Kellogg Unit, Pomona, Cal.

Appearing on the program were Dr. Eugene Patterson and Dr. Andre Boidin, from the Chas. Pfizer & Co. research center in Terre Haute, Ind., and Dr. E. C. Stutts, director of research for the Vitren Corp.

The program covered the subjects of "Latest Developments in Poultry Nutrition and Disease Control" and the "Highlights of the Annual California Animal Industry Conference" held in Fresno, Cal., Oct. 20-21.

**SHADES OF MONTY WOOLLEY—No, its Ezra Taft Benson, secretary of agriculture (right), conversing with Norman H. Beeston, general feed sales manager for the Quaker Oats Co., Ltd., England. Mr. Benson had just finished an address to the Chicago Executives Club, and Mr. Beeston is spending about three weeks in the U.S. and Canada. He is responsible for distribution of Ful-O-Pep feeds (dog food, too) throughout the United Kingdom.**

## USDA Announces "Distress" Loans For Grain Sorghums

WASHINGTON—The U.S. Department of Agriculture has announced that special "distress" price support loans will be available for 1958-crop grain sorghums in areas where storage is not immediately available and where grain sorghums can be stored successfully either on the ground or in temporary structures for short periods.

There are indications that storage may not be readily available in some areas as the harvest for this year's record grain sorghum crop progresses. As a result some producers will not be able to take out regular price support loans at harvest time. The temporary loan is designed to assist farmers to get price support during this period and avoid premature marketings with their adverse effect on market prices.

The temporary grain sorghum loans will mature in 90 days after the loan is taken out or on March 31, 1959, whichever date is earlier. The loans will be available in counties or areas designated by state agricultural stabilization and conservation committees.

## *Food & Drug Names Scientific Director*

WASHINGTON—The U.S. Food & Drug Administration announced the establishment of a new position of scientific director of the FDA recently and named Dr. Paul L. Day, biochemist at the University of Arkansas School of Medicine, to fill the post.

Making the announcement was George P. Larrick, commissioner of food and drugs, who said the position was established to "strengthen the scientific organization of the FDA." He said Dr. Day will be responsible for maintaining the scientific quality of the department's work and for coordinating all of its research efforts, both in Washington and in field laboratories across the country.

## Strengthening of Price For Turkeys Predicted

ESSEX JUNCTION, VT.—Despite a recent drop in the market, turkey growers may expect a strengthening of prices soon, Wallace Warren, Waltham, Mass., turkey specialist, told members of the Vermont Turkey Growers Assn. at their annual meeting here, Oct. 21.

He said there were not enough turkeys in storage to supply the demand last Easter and that this shortage will be reflected in increased prices for growers in the near future.

## Unidentified Buyer Seeks to Purchase Ogilvie Shares

MONTREAL — An unidentified company is currently attempting to buy 300,000 shares in Ogilvie Flour Mills Co., Ltd.

Ogilvie is in the feed manufacturing business, with plants at Montreal and other points in Canada, as well as the flour milling business.

The anonymous buyer is offering $44.75 a share. The deal, if the full amount of shares required were taken, would involve an expenditure of more than $13 million. The offer closes Nov. 5 but is subject to withdrawal at any time.

The offer to purchase was made by the National Trust Co. in a circular letter to shareholders. The proposed buyer has not been identified, but National Trust Co. said the firm "is a known Canadian company owned and operated by Canadians, and it is the firm intention of this purchaser to retain the interest acquired in Canadian hands."

Directors of Ogilvie stated that they do not recommend acceptance of the offer to purchase the company's shares at $44.75.

H. Norman Davis, president, said: "Based on market value of marketable securities, insured values of fixed assets, book value of tangible assets of unconsolidated subsidiaries and conservative valuation of other assets, the common shares should be worth very much more than the price now being offered for them.

"Earnings and market value of securities have continued to improve since the end of our fiscal year. I urge very careful consideration be-

(Turn to OGILVIE, page 93)

## Ft. Worth Grain Firms Centralize

FT. WORTH, TEXAS — Eleven grain firms have announced they will move into the fourth floor of the Ft. Worth Club Building before Jan. 1. Grain firms now located in various buildings will centralize operations for the convenience of customers. Two firms are already located in the building.

The Texas Grain & Feed Dealers Assn., composed of 700 members, will also secure offices in the building.

Firms contemplating the move are Uhlmann & Benjamin, Paul Allison Grain Co., Blewett-Little Grain Co., S. T. Oates Grain Co., Ray Barker, Bracket Grain Co., Producers Grain Corp., C-G-F Grain Co., Interstate Grain Corp., Uhlmann Elevators Co. and Uhlmann Grain Co.

## Dr. Albert C. Groschke Joins Eastern States

WEST SPRINGFIELD, MASS.—Eastern States Farmers Exchange has added to its staff Dr. Albert C. Groschke, poultry scientist. His work will be in poultry nutrition, in association with Dr. Francis H. Bird at the Eastern States feed research center, Ellington, Conn.

Dr. Groschke is the author or co-author of 23 scientific papers and is a member of a number of scientific organizations.

Previous to joining the Eastern States staff, Dr. Groschke was technical director of the feed supplements department of the Borden Co. While there he was on the Nutrition Council of the American Feed Manufacturers Assn. and served as chairman of the research committee.

Dr. Groschke received his doctor of philosophy degree from the University of Maryland in 1947. From 1947 to 1952 he was a staff member of Michigan State University where he carried on a number of studies in applied and basic research in poultry nutrition and mink feeding.

## AAFCO PUBLICATION AVAILABLE SOON

**BURLINGTON, VT.—Copies of the 1959 edition of the Official Publication of the Association of American Feed Control Officials will be available for distribution about Dec. 1. Orders may be sent to the association treasurer, Robert T. Wetherbee, 1 Ivy Lane, Burlington, Vermont. The price remains the same as in previous years, $5 per copy. This publication is important to the feed industry. It contains feedstuffs definitions (including changes made at the recent AAFCO meeting), regulatory principles, data on state feed legislation and proceedings of the annual meeting in 1958. In addition, feed analytical methods are included.**

## North Carolina Group Plans Poultry Plant

ROSE HILL, N. C. — Construction of a processing plant with a capacity of 40,000 chickens and 5,000 turkeys per day has started here, Mayor H. E. Latham announced recently.

The plant will be erected by the Farmers Industrial Development Corp., an organization of poultry growers and others in this area, and leased to the Rose Hill Poultry Corp., owned by Merritt Watson, Lowlands, and Ebran and Jessie S. Watson, Raleigh, under a debt liquidation arrangement.

"Construction of this modern plant will round out our rapidly growing poultry industry," Mayor Latham declared. He pointed out that the community is the center of an area now producing some 15 million broilers annually, with three large feed mills operating poultry programs. There are three hatcheries in the area, including two which were established this year in Rose Hill.

The plant, expected to be in operation early in 1959, will employ about 125 persons, Merritt Watson, president of the poultry corporation, added.

## Fish Meal, Scrap Production Reported

WASHINGTON — Production of 41,000 tons of fish meal and scrap was reported during August, 1958, according to a report of U.S. and Alaska firms reporting their production to the Bureau of Commercial Fisheries. Compared with August, 1957, there was little change.

Fish meal and scrap production during the first eight months of 1958 amounted to 144,000 tons, a decline of 23,000 tons from the same period a year earlier.

## Firm to Open New Feather Meal Plant

MANCHESTER, N. H.—The Manchester Rendering Co. will open a plant for the production of feather meal in Goffstown, N.H., according to Ralph Sloane, manager of the firm.

Twenty men will be employed at the new facility, which is to operate on a 24-hour schedule. The meal will be used as a protein source for poultry feeds.

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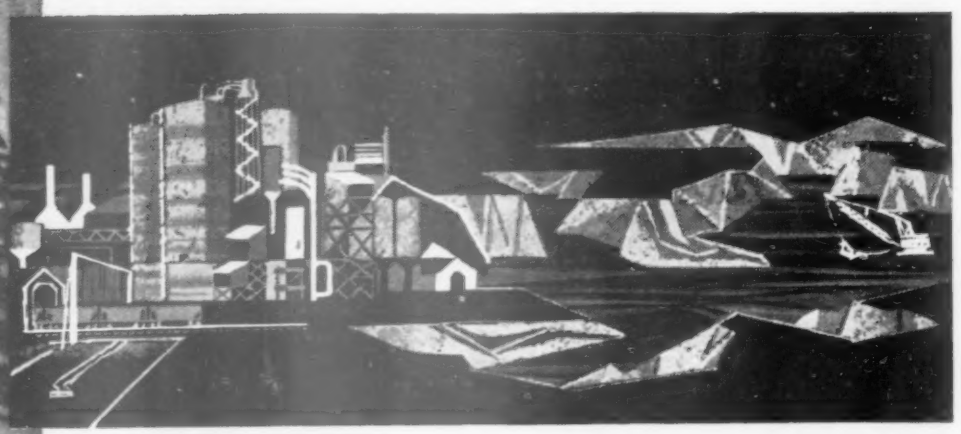

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# *Stocks of Feed Grains at Record Levels on Oct. 1*

WASHINGTON—Stocks of wheat, corn, sorghum grain, barley and soybeans in all positions on Oct. 1 moved to new record levels for that date, according to the U.S. Department of Agriculture.

Wheat stocks at 2.1 billion bushels, corn at 1.5 billion, sorghum grain at 390 million, barley at 498 million and soybeans at 21 million bushels exceeded the previous records by 18, 3, 280, 7, and 49%, respectively. Oat stocks approached the record level and were 15% above a year earlier. Rye and flaxseed stocks each exceeded the previous year with rye sharply above average.

Stocks of feed grains—corn, oats, barley and sorghum grain—totaled 83 million tons, nearly one-sixth above the previous record of 71.7 million tons in storage Oct. 1, 1957.

Old corn in all storage positions Oct. 1 at 1,467 million bushels continues an upward trend in carryover which began in 1953. However, the increase in carryover of 48 million over a year ago was far less than the yearly increase the past few years. Farm stocks at 341 million bushels were well below a year earlier but there was an increase in stocks in interior mills, elevators and warehouses as well as CCC bins. Nearly all the off-farm stocks were owned by the CCC and most of the farm stocks of old corn were soon to be delivered to the CCC or resealed. Disappearance of old corn from all storage positions during the July-September quarter was a record 623 million bushels, compared with 548 million the same quarter last year. This large disappearance reflects the greater amount used for feeding the increased livestock numbers.

Oats stocks on Oct. 1 of 1,332 million bushels were 15% larger than a year earlier and largest since 1945 except for October, 1955, which matches 1958. As usual at this season most oats were on farms—this year 90%. The 1,199 million bushel farm stocks total represents the largest Oct. 1 holdings on farms since 1945 and was 14% larger than a year earlier. Off-farm storage also was considerably larger than at the same time last year and, except for 1955, the largest of record for the date. Holdings owned by CCC or under price support, although larger than a year earlier were of relatively minor importance.

Oats disappearance during the July-September quarter of 413 million bushels was larger than in 1957 but slightly below average.

Stocks of barley on Oct. 1 were a record high of 498 million bushels and 7% above the previous record a year earlier. Farm stocks at a record 310 million bushels were 12% above the large holdings on Oct. 1, 1957. Total off-farm stocks at 189 million bushels were only slightly less than the record a year earlier. These were comprised of terminal storage holdings of 44 million bushels, holdings by interior mills and elevators at 133 million and CCC bin stocks of 12 million bushels. CCC bins held 2½ times as much barley as a year earlier, but the other off-farm positions were below last year. Almost one-half of the off-farm stocks were government owned or under CCC warehouse loan. Disappearance of barley from all positions during the July-September, 1958, quarter was a record high of 136 million bushels.

Holdings of old sorghum grain in all storage positions on Oct. 1, at 309 million bushels were nearly four times a year earlier and the previous record in 1956. These carryover stocks represent over half the large 1957 production and nearly all the grain is owned by CCC.

**STOCKS OF GRAINS, OCT. 1, 1958 WITH COMPARISONS**

**(In thousand bushels)**

| Grain and position | Oct. 1 av. 1947-56 | Oct. 1, 1957 | July 1, 1958 | Oct. 1, 1958 |
|---|---|---|---|---|
| WHEAT— | | | | |
| On farms* | 494,201 | 393,898 | 50,291 | 634,754 |
| Terminals† | 314,826 | 412,237 | 304,782 | 472,590 |
| Commodity Credit Corp.‡ | 47,412 | 82,883 | 78,270 | 83,731 |
| Int. mills, elevators and warehouses*¶ | 536,376 | 714,829 | 447,128 | 934,947 |
| Total | 1,392,816 | 1,603,847 | 880,471 | 2,126,022 |
| RYE— | | | | |
| On farms* | 12,337 | 15,383 | 2,452 | 19,471 |
| Terminals† | 6,863 | 7,684 | 4,109 | 6,284 |
| Commodity Credit Corp.‡ | 353 | 25 | 388 | 165 |
| Int. mills, elevators and warehouses*¶ | 4,726 | 6,399 | 2,881 | 7,045 |
| Total | 24,278 | 29,491 | 9,740 | 32,965 |
| CORN— | | | | |
| On farms* | 331,854 | 419,622 | 1,025,932 | 341,290 |
| Terminals† | 23,362 | 115,856 | 103,975 | 85,125 |
| Commodity Credit Corp.‡ | 289,223 | 572,821 | 578,243 | 611,614 |
| Int. mills, elevators and warehouses*¶ | 73,555 | 311,356 | 382,289 | 429,460 |
| Total | 717,994 | 1,419,655 | 2,090,439 | 1,467,489 |
| OATS— | | | | |
| On farms* | 1,040 702 | 1,056,555 | 275,124 | 1,199,364 |
| Terminals† | 29,119 | 25,420 | 8,185 | 30,380 |
| Commodity Credit Corp.‡ | 3,142 | 2,277 | 4,101 | 4,932 |
| Int. mills, elevators and warehouses*¶ | 61,753 | 76,084 | 38,176 | 88,975 |
| Total | 1,134,717 | 1,160,336 | 325,586 | 1,331,651 |
| BARLEY— | | | | |
| On farms* | 187,226 | 275,531 | 62,462 | 309,666 |
| Terminals† | 28,048 | 44,855 | 29,710 | 44,333 |
| Commodity Credit Corp.‡ | 1,759 | 4,415 | 9,899 | 11,787 |
| Int. mills, elevators and warehouses*¶ | 81,106 | 140,521 | 65,994 | 132,638 |
| Total | 298,140 | 465,322 | 168,065 | 498,424 |
| SORGHUM GRAIN— | | | | |
| On farms* | 5,215 | 3,411 | 28,063 | 13,330 |
| Terminals† | 9,052 | 18,806 | 88,661 | 84,777 |
| Commodity Credit Corp.‡ | 1,037 | 20 | 3,747 | 3,096 |
| Int. mills, elevators and warehouses*¶ | 17,323 | 57,243 | 222,372 | 208,131 |
| Total | 32,627 | 79,480 | 342,843 | 309,334 |
| SOYBEANS— | | | | |
| On farms* | 2,449 | 3,623 | 26,529 | 2,183 |
| Terminals† | 767 | 3,539 | 10,839 | 2,635 |
| Commodity Credit Corp.‡ | 166 | 0 | 0 | 2,012 |
| Processing plants* | 684 | 1,493 | 36,194 | 4,643 |
| Int. mill. elevators and warehouses*¶ | 635 | 1,242 | 33,778 | 9,610 |
| Total | 4,701 | 9,897 | 107,340 | 21,083 |
| FLAXSEED— | | | | |
| On farms* | 19,752 | 13,057 | 1,544 | 20,102 |
| Terminals† | 8,025 | 3,731 | 3,328 | 3,209 |
| Commodity Credit Corp.‡ | 4 | 0 | 0 | 0 |
| All others*¶ | 12,824 | 10,471 | 3,860 | 13,664 |
| Total | 40,604 | 27,259 | 8,732 | 36,975 |

*Estimates of the Crop Reporting Board.

†Commercial stocks reported by Grain Division, AMS, at 45 terminal cities.

‡Owned by CCC and stored in bins or other storages owned or controlled by CCC; other CCC-owned grain is included in the estimates by positions.

¶All off-farm storages not otherwise designated, including merchant mills.

Calvin Hunzeker | Henry Heckman | R. F. McLeod | Thomas Lawrence

**SPEAKERS—Some of the participants in the 1958 Feed Production School, being held Nov. 12-14 in Kansas City, are pictured here. Three of the men will be among the more than dozen experts discussing various aspects of bulk handling. They are Calvin Hunzeker, O. A. Cooper Co., Beatrice, Neb.; Henry Heckman, Jones-Hettelsater Construction Co., Kansas City, and R. F. McLeod, Wirthmore Feeds, Waltham, Mass. The fourth man pictured, Thomas Lawrence of Lawrence-Leiter & Co., Kansas City, will present the school's concluding feature, a special presentation on how supervisory personnel can do a better job of working with others by understanding just what motivates and influences people.**

# *Broiler Hatchery Supply Placement Increase Noted*

WASHINGTON — The indicated placement of pullet chicks for broiler hatchery supply flocks by 10 of the largest primary breeders of broiler replacement stock totaled 2,700,000 chicks during September. This was 40% more than in September, 1957, according to report from the Crop Reporting Board, U.S. Department of Agriculture.

Pullet chick placements by the 10 breeders during the first nine months of 1958 totaled 26,103,000—34% more than during the same period of 1957.

The totals include pullet chicks sold during the month, plus the number of pullet chicks expected from eggs sold during the preceding month. The conversion from eggs to expected pullet chicks was made on the basis of 125 pullet chicks per case of hatching eggs sold.

The primary breeders included in this report account for a very large percentage of total supply of replacement pullets for broiler hatchery supply flocks. Sales of replacement pullets by these breeders provide an indication of the potential number of pullets available for addition to hatchery egg supply flocks several months before the pullets will actually move into the flocks.

**Pullet Chicks* Placements for Broiler Hatchery Supply Flocks**

**(Reported by 10 Leading Breeders)**

| Month | 1956 | 1957 | 1958 | 1958 as % of 1957 |
|---|---|---|---|---|
| | ——000's omitted—— | | | % |
| January | 1,912 | 1,886 | 1,982 | 105 |
| February | 2,187 | 1,997 | 2,270 | 114 |
| March | 2,866 | 2,538 | 3,118 | 123 |
| April | 2,996 | 3,033 | 3,320 | 109 |
| May | 2,854 | 2,899 | 3,623 | 125 |
| June | 2,298 | 2,060 | 3,390 | 165 |
| July | 1,778 | 1,676 | 3,054 | 182 |
| August | 1,884 | 1,410 | 2,646 | 188 |
| September | 1,864 | 1,935 | 2,700 | 140 |
| October | 1,922 | 2,297 | .... | .. |
| November | 1,900 | 1,926 | .... | .. |
| December | 1,787 | 2,238 | .... | .. |
| Annual total | 26,248 | 25,895 | .... | .. |

*Includes expected pullet replacements from eggs sold during the preceding month at the rate of 125 pullet chicks per case of eggs.

# R. A. Hodgdon, Retired Feed Man, Dies

MALDEN, MASS. — Robert A. Hodgdon, 81, retired treasurer and manager of the Cunningham Grain Co., now a part of Wirthmore Feeds, Inc., died Oct. 22 at his home here.

Mr. Hodgdon started his business career with the Charles M. Cox Co., Boston, and when the firm purchased the Cunningham Grain Co., he was made manager and treasurer. After retirement from the firm in 1939 he served as a director.

He also served as an alderman in Malden at one time and was active in civic and church affairs in the community. In 1956 he observed a golden wedding anniversary. Mrs. Hodgdon died in July, 1957. Survivors include a daughter and a grandson.

# Production School To Answer Specific Questions

KANSAS CITY — A good deal of emphasis will be placed on answering feed men's specific questions when the annual Feed Production School is held Nov. 12-14 at the American Royal Bldg. in Kansas City.

This was pointed out this week by Loren V. Burns of Mel Miller & Co., Kansas City, who is production school coordinator. Mr. Burns said that the school program, sponsored by the Midwest Feed Manufacturers Assn., will provide the answers in talks, live demonstrations and discussions, plus question-and-answer sessions.

In addition to the bulk handling information (a principal feature of the school), there will be specialized sessions on such things as liquid handling, micro-ingredient mixing, pelleting, mill remodeling and maintenance cost control. Also, there will be a special Small Mill Short Course on Nov. 14, running concurrently with the regular school.

The deadline for registration is Friday, Nov. 7.

Mr. Burns said that a considerable number of questions have been submitted in advance. Others will also be answered at the school by the 44 production experts on the program, and live demonstrations will be presented with equipment supplied by 48 machinery firms.

**Examples of Questions**

Among questions to be answered, Mr. Burns noted, are these: Just what are the operating costs of typical bulk systems? What investment is required for the various systems? How simple can a bulk system be? How do we prevent "mix-ups" between bulk feeds? How do we design a bulk system? How do we avoid fines? What is the best bin design? What new methods of bulk handling can be expected? How do we get quick "turn-around" on bulk delivery equipment? How do we effectively handle micro-ingredient premixing and mixing? What are the best liquid handling systems? How about micro-ingredients in liquid form? Does it pay to remodel an old mill? What are some new ideas in mill design? How do we pellet complete rations? What's the best mixing time in a custom mill? What is a typical custom mill layout today, and what does it cost? How can we effectively handle ingredients in the small mill? What about pelleting in the local mill?

Specific answers to many questions like these will be given, Mr. Burns pointed out, and opportunities will be provided for discussions.

**Concluding Feature**

Mr. Burns also called attention to a special concluding feature on Nov. 14 for enrollees in both the regular school and the Small Mill Short Course. It is a presentation on "Humanics and Automation" by Thomas Lawrence of Lawrence-Leiter & Co.,

(Turn to SCHOOL, page 98)

# Results of Survey On Custom Mixing Of Drugs Reported

WASHINGTON — Results of a survey of state control officials on control activities in connection with custom mixing of drugs in feeds were reported at the recent convention in Washington of the Association of American Feed Control Officials.

Rodney Berry of Virginia, the investigator, reported the results of the survey and indicated that conclusions cannot yet be drawn. A committee of the association is being established to study problems in connection with custom mixing of drugs in feeds. (Feedstuffs, Oct. 17.)

The survey showed, among other things, that 35 states permit custom mixing of drugs in feeds, while one does not, with others giving varied answers. In a convention discussion of this, one question raised was the place of the Food and Drug Administration if these custom mixes cross state lines.

Mr. Berry reported that the questionnaire was mailed to all members of the AAFCO. Forty-two states, plus Hawaii, replied to the questionnaire.

(One state was not counted among answers to the first question. Five states were classified as not counted on the other questions. There were various reasons for this, such as no feed law, not a problem since no custom mixed feed being sold, questionnaire not answered, etc.)

The questions and numbers giving various answers were:

**1. Do you permit custom mixing of drugs in feeds?**

Thirty-five states said yes; one state (Illinois), no; two states, qualified yes except that they do not permit custom mixing of drugs consid-

(Turn to DRUGS, page 99)

# Closing of Some G.L.F. Retail Stores Predicted

SYRACUSE, N. Y.—Consolidation of retail stores and closing of some small units of the Cooperative G.L.F. Exchange, Inc., were predicted by Glenn E. Edick, director of distribution, at the organization's stockholders' meeting.

The changes are necessary, he said, because small units with a limited potential cannot afford heavy investments for equipment and men to provide the many services demanded by today's larger farms.

Charles H. Riley, director of wholesale, reported on improvements and modernization of the G.L.F. wholesale divisions. He said 34 changes were made in facilities and methods of feed production in the four G.L.F. feed mills last year to improve quality, service and production efficiency.

Treasurer William J. Fields announced plans to increase preferred stock in certain G.L.F. retail stores by $2 million by June, 1959. The recently announced increase in the limit of stock ownership from 100 shares to 400 shares per member, he noted, should provide enough additional capital for necessary new facilities and services.

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# Oilseed Meal Futures Prices Show Increase

MEMPHIS — Most prices rose in oilseed meal futures on the Memphis Board of Trade during the past week.

Good cash oil meal business developed, giving the market a boost. Some short covering in soybean oil meal brought prices higher, following the better tone to the soybean market.

The cottonseed oil meal boards were aided by new reduced rates for shipping meal to southern points. This brought substantial demand from the Atlanta territory, dealers said, and bolstered prices.

Unrestricted soybean oil meal closed Oct. 29 75¢ to $1.30 ton higher than on Oct. 22. Eastern Trunk Line soybean oil meal was 15¢ lower, bulk solvent cottonseed oil meal $1 to $1.50 higher and sacked old process cottonseed oil meal unchanged to 20¢ higher.

Turnover for the period amounted to 11,800 tons of unrestricted soybean oil meal and 5,800 tons of bulk solvent cottonseed oil meal.

# Chicks Placed in Principal Broiler Areas

(000's omitted)

| Week ending | Maine | Conn. | Penn. | Ind. | Ill. | Mo. | Del. | Md. |
|---|---|---|---|---|---|---|---|---|
| August 23 | 1,124 | 657 | 827 | 851 | 194 | 471 | 1,648 | 1,853 |
| August 30 | 1,071 | 623 | 940 | 886 | 187 | 643 | 1,759 | 1,798 |
| September 6 | 1,022 | 600 | 938 | 870 | 226 | 628 | 1,483 | 1,930 |
| September 13 | 1,070 | 836 | 758 | 864 | 142 | 583 | 1,566 | 1,763 |
| September 20 | 878 | 513 | 692 | 752 | 180 | 552 | 1,371 | 1,714 |
| September 27 | 1,009 | 551 | 680 | 732 | 152 | 495 | 1,450 | 1,789 |
| October 4 | 1,103 | 433 | 767 | 760 | 202 | 567 | 1,601 | 1,674 |
| October 11 | 1,087 | 489 | 584 | 727 | 159 | 570 | 1,576 | 1,690 |
| October 18 | 1,082 | 378 | 633 | 713 | 119 | 495 | 1,445 | 1,643 |
| October 25 | 1,056 | 419 | 589 | 646 | 96 | 557 | 1,686 | 1,566 |

| Week ending | Va. | W. Va. | N.C. | S.C. | Ga. | Fla. | Ala. | Miss. |
|---|---|---|---|---|---|---|---|---|
| August 23 | 1,301 | 652 | 2,478 | 366 | 5,360 | 200 | 2,571 | 1,695 |
| August 30 | 1,163 | 639 | 2,395 | 361 | 5,093 | 171 | 2,417 | 1,649 |
| September 6 | 1,188 | 537 | 2,337 | 309 | 4,879 | 202 | 2,366 | 1,658 |
| September 13 | 1,138 | 589 | 2,341 | 321 | 4,648 | 215 | 2,391 | 1,553 |
| September 20 | 1,015 | 497 | 2,329 | 292 | 4,573 | 161 | 2,293 | 1,608 |
| September 27 | 1,059 | 423 | 2,245 | 332 | 4,602 | 178 | 2,239 | 1,649 |
| October 4 | 956 | 563 | 2,351 | 313 | 4,927 | 144 | 2,382 | 1,723 |
| October 11 | 1,039 | 478 | 2,398 | 344 | 4,942 | 151 | 2,525 | 1,639 |
| October 18 | 932 | 446 | 2,352 | 362 | 5,002 | 182 | 2,355 | 1,637 |
| October 25 | 834 | 485 | 2,229 | 315 | 5,034 | 180 | 2,285 | 1,613 |

| Week ending | Ark. | La. | Texas | Wash. | Oregon | Calif. | Total 22 areas 1958 | Total 22 areas 1957 |
|---|---|---|---|---|---|---|---|---|
| August 23 | 2,816 | 457 | 1,948 | 359 | 165 | 905 | 29,098 | 25,934 |
| August 30 | 2,587 | 373 | 1,869 | 344 | 125 | 824 | 27,884 | 25,490 |
| September 6 | 2,381 | 395 | 1,898 | 359 | 168 | 878 | 27,218 | 25,228 |
| September 13 | 2,283 | 400 | 1,748 | 342 | 176 | 916 | 26,335 | 25,028 |
| September 20 | 2,165 | 355 | 1,618 | 249 | 193 | 821 | 24,803 | 24,298 |
| September 27 | 2,242 | 309 | 1,469 | 287 | 175 | 829 | 24,896 | 24,134 |
| October 4 | 2,405 | 371 | 2,023 | 247 | 123 | 871 | 26,506 | 24,675 |
| October 11 | 2,416 | 404 | 2,165 | 272 | 149 | 770 | 26,574 | 24,237 |
| October 18 | 2,374 | 423 | 2,126 | 219 | 141 | 761 | 25,820 | 23,930 |
| October 25 | 2,475 | 411 | 1,963 | 281 | 118 | 773 | 25,611 | 23,413 |

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## Tuxedo Mills to Cut Shipping Time With New Center

CINCINNATI — A new, one-floor shipping center covering approximately 25,000 sq. ft. is scheduled to be built this winter by Early & Daniel Co.'s Tuxedo Mills, Cincinnati, and to be in operation by early spring.

Located in the area between the present plant and offices, the steel and concrete warehouse will more than dougle the present daily shipping capacity, according to Parker Hitzfield, plant manager. He said the firm decided to build the center as one of the first steps of an expansion program "because our increasing business has brought with it a bottleneck at the shipping docks."

The announcement said the installation will mean a more economical production setup for the firm. "The entire output of the plant will be controlled by automatic daily inventory at the warehouse," Mr. Hitzfield said. "We'll be able to schedule all of our lines well in advance of need."

The company's plans with the new installation call for no truck to be held up, from arrival to departure, for more than 30 minutes, and for all rail shipments to be dispatched within 24 hours after receipt of orders.

Replacing the "short inventory" under which the company operates at present will be a three to five-day supply of all of the 200 varieties of feeds and packages the company has on its supply list at any one time, the announcement said.

The new shipping center is designed to fit into the current materials-flow at the mills so that it will serve both rail and truck shipping and receiving without conflict at the loading docks. All loading and unloading will be under one roof. The roof of the building will be high enough to run freight cars directly into the plant.

Flow of shipping operations will operate in about the following manner: Rail shipping will be done on one side of the building; trucks will be handled on the other. Finished bagged feeds will be conveyed from the semi-automatic production line to a mechanical "lazy susan" distributing table. The table will act as a governor at the palletizing point. Here sacks will be loaded onto pallets. Fork lift trucks will complete storage.

When a truck arrives at the docks for a load, it will back into one of the four loading docks, according to the dockmaster. The load in many instances will be assembled and waiting on the dock. The warehouse features the "A-Just-A-Dock" which matches the warehouse floor to the various truck bed heights.

## "Chief Slingemfodder" Honored for Showing Midwest Tribe "How"

WAGONER, OKLA.—A new chief, resplendent in Cherokee headdress, was introduced here at a meeting of the directors of the Midwest Feed Manufacturers Assn.

He is "Chief Slingemfodder," otherwise known as Hugh Kelley, Ames (Iowa) Reliable Feed Co. On hand to congratulate him on his new achievement was Ray Ammon, Quaker Oats Co., St. Joseph, Mo., president of the Midwest, and other members of the directorate tribe. (Picture, page 1.)

As part of an Indian pow-wow entertainment, following the board meeting here, Mr. Kelley was presented the chief's feathers and a suitable parchment scroll to prove his new status. Mr. Kelley won the top award in the Midwest membership solicitation contest among association directors.

Other directors were awarded an appropriate number of feathers for members secured, while those who reported no new members were "scalped" with a Yul Brunner-type headpiece. The meeting took place at Western Hills Lodge.

## *Kent Feeds to Hold Dealer Sales Clinics*

MUSCATINE, IOWA—Fundamental nutritional and sales information of use to dealers in their daily operations will be given to Kent Feeds dealers at two dealers' clinics to be sponsored Nov. 3-4 and 6-7 by the Muscatine, Iowa, firm.

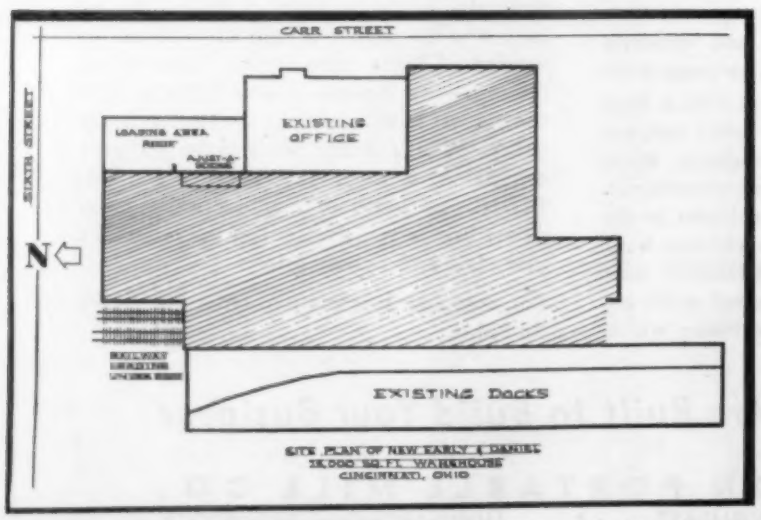
Clinics will be held at the Blackhawk Hotel, Davenport, Iowa, Nov. 3-4 and at the Sheraton-Martin Hotel in Sioux City, Iowa, Nov. 6-7. In addition to work shops and tours of Kent research and production facilities conducted by Kent department heads, guest experts in the fields of selling and animal nutrition will speak.

## *Economist Predicts Easier Protein Prices*

EAST LANSING—Michigan farmers are being advised that there is likely to be less profit in tying money up in stocks of protein feeds this fall hoping to beat a price rise next spring.

John Ferris, extension farm economist at Michigan State University, in a release to weekly newspapers states that huge supplies of soybean meal are expected to hold prices down and keep them from skyrocketing as they did last spring.

Prices of soybean meal are expected to average $3.75@4 cwt. during the first half of 1959, he said, and cottonseed meal is expected to average around $4.25 cwt.




**NEW TUXEDO FEEDS WAREHOUSE—The shaded area in this site plan of the new Tuxedo Feeds warehouse at the Early & Daniel Co., Cincinnati, shows the relative size and shape of the new building to be in operation early next spring. All rail and truck loading will be done under one roof. Facilities are expected to cut feed order processing and loading time in half.**

## September Dehy Disappearance Up

KANSAS CITY—Disappearance of dehydrated alfalfa meal in September was about 10% above last year and above average, according to calculations of American Dehydrators Assn., Kansas City, based on the U.S. Department of Agriculture production and stocks report for that month. Production in September also was higher than a year ago and the average for that month.

Disappearance was estimated at 105,500 tons for September, compared with five-year average of 96,060 tons. Total disappearance for the crop year to date (five months) amounts to 544,000 tons, compared with 509,800 in the like period last year and 528,680, the five-year average.

September production was 151,200 tons, compared with 147,800 a year ago and 136,740, the five-year average. Total output for five months of the current crop year is 891,600 tons, compared with 909,200 last season and 855,200, the five-year average.

Government figures on stocks show a Sept. 30 total of 429,300 tons on hand, compared with 437,500 a year ago.

## American Scientific Laboratories Becomes Schering Subsidiary

CHICAGO — American Scientific Laboratories, Inc., Madison, Wis., will become a wholly-owned subsidiary of the Schering Corp., according to a joint anouncement made here Oct. 31. The merger will become effective Jan. 2, 1959.

The move expands Schering Corp. activities into all major phases of the agricultural drug business. The parent corporation, with headquarters in Bloomfield, N.J., is a national manufacturer of ethical veterinary drugs. Last year it moved into the feed additive field by acquiring White Laboratories, Inc., Kenilworth, N.J., manufacturers of Lipamone and other products.

The American Scientific Laboratories is a well-known supplier of veterinary biologicals and proprietary drugs for agriculture. This week's announcement from Francis C. Brown, president of Schering, and Hubert D. White, ASL president, indicates the merger was made through an exchange of stock. Number of shares was not disclosed.

Operation of American Scientific will continue under present management, it was explained. Other ASL officers include Kenneth T. White, executive vice president, and Dr. Phillip G. White, vice president and director of research.

Market research studies by Schering point out a potential market for agricultural pharmaceuticals equal to the field of human medicine, according to the statement. At the present time this market is estimated at $170 million, including $45 million veterinary ethical drugs, $50 million in feed additives and $75 million in unrestricted proprietary drugs.

## Feed Tech Advisory Committee to Meet

KANSAS CITY — The Feed Technology Advisory Committee will hold its semi-annual meeting at the Golden Ox Restaurant, Livestock Exchange Building, Kansas City, at noon Nov. 12, David H. McVey, General Mills, Inc., Minneapolis, chairman of the committee, has announced.

The meeting place is a few blocks from the American Royal Building, which will house the Feed Production School sponsored by the Midwest Feed Manufacturers Assn., which will be in session Nov. 12-14.

## Yugoslavia, Spain, Pakistan, Israel In PL 480 Deals

WASHINGTON — Negotiating instructions for surplus disposal programs under Public Law 480 have been cleared by the U.S. Department of Agriculture and sent to Yugoslavia, Pakistan, Spain and Israel. USDA expects to issue procurement authorizations for the commodities involved to these nations within two weeks.

As far as Yugoslavia is concerned, the major commodity programs would involve wheat and cotton with a later authorization for grain sorghums. It is understood that the annual Yugoslav program will amount to approximately 900,000 tons wheat, a total which might be expanded later by an additional 200,000 tons if Yugoslav transactions with Russia for that quantity do not mature.

For grains Pakistan will be in the U.S. market only for wheat on the basis of information now available.

Spain is requesting oil and feed grains and the Israeli negotiations, which will be conducted in Washington, will involve wheat and coarse grains.

There is a strong possibility that the Israeli negotiations will be concluded momentarily, and that the first procurement authorization, involving mainly feed grains, will be issued by the middle of next week.

## *New Broiler Breeder Cockerel Announced*

SPRINGDALE, ARK. — A new White Cornish breeder cockerel for the broiler industry has been announced by the Jeff D. Brown Co., Springdale.

Named "Ledbrest," the dominant white cockerel has fertility "considerably above any Cornish-type males the company has ever tested," the announcement said. "Last year, in the field, the Ledbrest cockerels had an average hatch of 84.6%, with an average salable chick record of 82.7%.

"The longer keel of the broiler crosses from Ledbrest males allows the birds to carry additional weight, and with the typical broad breast of the Cornish, the ideal in conformation is approached.

"Tests show that the Ledbrest consistently has a better feed conversion than other breeds or crosses, and this characteristic is transmitted to broiler chicks."

The Brown company also states that the bird withstands stresses better.

The walnut comb is called an advantage. "Because it is low on the head," a Brown company spokesman said, "there is less danger of freezing in cold climates. Also, the male broilers have virtually no comb or wattles, assuring less danger when birds fight."

The new breeder cockerel is a product of nine years of study and breeding and a year of field testing, said Gail Brown of the Brown company.

Jeff D. Brown started in the broiler business in Arkansas in 1921. He opened a feed plant in 1930. In 1946 he brought out his own broiler chick, known as Brown's Eureka.

## Columbus Club Plans Meeting, Holiday Party

COLUMBUS, OHIO — Members of the Columbus Feed Club will honor past chairmen of the organization at its dinner meeting Nov. 3 at the Southern Hotel.

Maj. Lee Lawrence will be the speaker and show a film, "The Pentomic Army," describing the new organization of the U.S. Army from the regiment system to a battle group system.

The club will hold its holiday party to which wives are invited at the Everglades on Dec. 5.

*For Better Pellets...*

# THE SWITCH IS TO PACO

Here's the success story of the feed business . . . what dealers and customers* are saying after they've switched to pellets made from Paco!

**"They form better . . . with the glossy and slick look I want."**

**"Moisture doesn't affect my Paco pellets."**

**"Fines are down 38%!"**

**"Customers tell me Paco pellets taste better."**

**"And smell? Man, they smell good!"**

**"Production is up a healthy 6%."**

**"Nobody told me it was the only binder on the market that was nutritious, too . . . but it sure is."**

These are the facts! Unsolicited testimonials are proving that Paco means better pellets for your customers . . . regardless of other ingredients in the formula! Stock and sell Paco for bigger profits from pellets!

**names sent on request*

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- ☐ FARM USES OF PACO

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# Wirthmore Development Program Stresses Vital Role of Research

By GEORGE L. GATES
Editor of Feedstuffs

A spanking new laboratory occupying much of the area on one floor of the new Wirthmore Feeds, Inc., home office building at Waltham, Mass., immediately conveys to visitors the fact that Wirthmore is a research-minded organization.

This fact is further underlined at the company's companion research facility, a 180-acre research farm a few miles away at Berkley, Mass. The farm, acquired in late 1954 after the company's original research farm was "suburbanized" out of existence, has been tooled up for extensive livestock and poultry studies with a construction program, and additional facilities are still being built.

The new headquarters building, dedicated just a few weeks ago, includes office space for company departments which formerly were scattered in four communities. The general offices, advertising and printing facilities in the attractive brick and glass building reflect typical "new home" convenience and orderliness. However, without much doubt, the research department facilities in the building are a source of particular pride to the company.

Located at the "heart" of the building, the laboratories and experimental chick rooms could be termed figuratively, too, the heart of the headquarters operations. It is in this area that new and improved products are developed—the central activity that pumps sales and service opportunities to other departments of a feed company.

### Three Types of Research

Research activities, the company points out, are divided into three closely related groups. One is applied research with chicks in air-conditioned, humidity-controlled laboratory units where feeding trials are conducted continuously. A second is applied research on the metabolism of nutrients and drugs through use of biochemical techniques. These types are conducted at the Waltham laboratories. The third type, involving testing of rations, is conducted at the Berkley research farm.

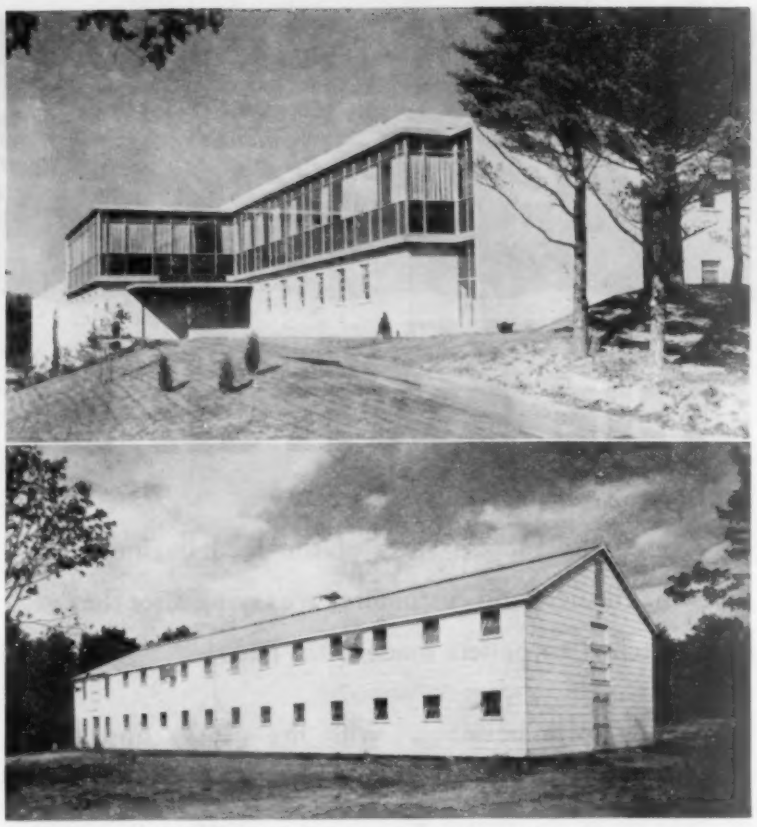
Heading up the coordinated activities of Wirthmore research is Dr. Walter Glista, vice president and director of research. He moved up to his present position after the retirement of Warren S. Baker in 1956. The research staff includes Robert L. Bickford, assistant director; Dr. David A. Libby, specialist in poultry; Winston W. Pierce and Dr. Kendall L. Dolge, in charge of livestock work. Dr. R. O. Brooke is the quality control director, and Dr. Mark H. Bert heads a group of specialists as director of the new research laboratory. Herbert C. Hutchings, Jr., is the manager, and Richard A. Koski, assistant manager of the research farm.

The scope of the activities of the research group can best be described with examples of work being conducted at both the laboratory and the farm.

The laboratory in the new building (see floor plan) includes six experimental chick rooms, where 4,000 birds are kept on test in batteries. Arranged in a rectangle surrounding these rooms are a series of individual laboratory rooms and the offices of research personnel. Among these are the following laboratories:

**BIOCHEMISTRY:** Designed for chemical work in nutrition research and special metabolic studies. It includes an area for research with ra-

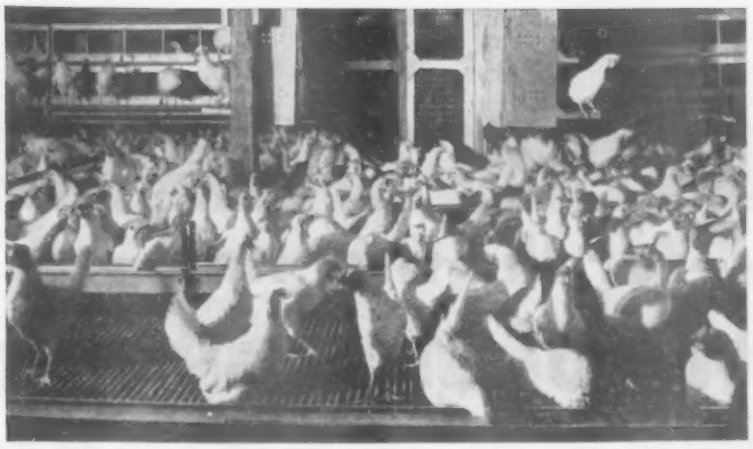
**ALLEY VIEW—Pictured are 48 pens in broiler unit No. 2 at the Wirthmore Research Farm, one third of the ultimate capacity of the unit. Pens, 4 by 4 ft., are doubled-decked, with sliding doors permitting easy access to each. Feed containers are attached to doors. The overhead ventilation duct is part of the forced air ventilation system in the windowless house, designed for uniform environmental conditions necessary for testing coccidiostats, coccidiosis vaccines and feed additives which require multiple treatments.**



**TWO RESEARCH "HOMES"—Wirthmore Feeds' research facilities are centered in two separate locations near Boston, Mass. Chemical and biological laboratories make up a large share of the 50,000 sq. ft. of floor space in the new home office building (top) on Route 128, Waltham, Mass. Shown below is a two-story broiler house, one of several research units located at the company's 180-acre research farm at Berkley, Mass. The office building, which houses administrative offices and a printing plant as well as research facilities, is situated on a hillside overlooking the Cambridge Reservoir. The farm, in a typical New England rural setting, includes facilities for extensive feeding and management experiments.**

### Floor Plan of Laboratory Area

**RESEARCH CENTER FACILITIES—One of several laboratories in the new Wirthmore research centers is the drug laboratory, pictured at the left. Feed quality control work done here involves the application of analytical procedures for at least 15 different drugs and development and improvement of analytical methods for new drugs. The center picture shows the experimental feed mixing room in the basement of the research center-headquarters building. Feeds used for research work are mixed here with a vertical half-ton twin-screw mixer (center) and a Hobart mixer, the latter for rations containing high percentages of fats and other liquids. In the center of the rectangle formed by the laboratories (see floor plan above) are six temperature and humidity-controlled experimental chick rooms where 4,000 birds are constantly on test. One of these is shown in the picture at the right.**



**LAYER UNIT—Slat floor pens are a construction feature of this Wirthmore layer research unit. Leghorns are housed in this section at one square foot per bird, with 2,600 currently on a combined nutrition and management study. Automatic feeders and an overhead track carrier are included in the equipment, and pens are ventilated with a combination of windows and exhaust fans.**

dioactive tracer techniques. A variety of analytical equipment and chemical determinations are used for both quality control and research.

**CRUDE FIBER:** Improved apparatus is used to determine crude fiber content of ingredients and formula feeds. Sets of six spoutless beakers, suspended on compression springs, permit analysts to quickly swivel the contents of the beakers simultaneously without lowering the hot plate under each beaker.

**PROTEIN:** Sixty samples can be digested and 60 can be distilled simultaneously in this laboratory. Feed samples are digested in concentrated acid while others are distilled in strong alkali on Kjeldahl apparatus. Flasks rest on three-heat control heaters, which can be shut off automatically by electric timers.

**APPLIED RESEARCH:** Current areas of interest being studied here are amino acids, vitamin stability, antibiotics, major and trace minerals and molds. Facilities also are available for modifying analytical methods according to requirements of special projects.

**DRUG LABORATORY:** Work here involves application of analytical procedures for at least 15 different drugs. Also, analytical methods for new drugs are developed and improved. (Dr. Brooke, quality control director, presented a paper on determination of phenothiazine in feeds at the recent meetings of the Association of Official Agricultural Chemists in Washington.)

**CHICK ROOMS:** New lots of chicks are started on tests at intervals of about 11 days in the six rooms with capacity for 4,000 chicks. Recording thermometers and hygrometers are in periodic use at several locations and heights in each room in order to maintain close heat and humidity controls. A separate air conditioning unit services this area in the building. Promising results

**TURKEY TESTS — Nutrition and management research with turkey breeders is conducted in this section of a 48 by 154 ft. pole-type house on the Wirthmore farm. The unit contains twenty 11 by 20 ft. pens with feed rooms on both ends and the middle of the building. Eight pens, among them this one, are devoted to breeder studies. The other 12 are used for studies with broilers and heavy market turkeys. In addition to the 600 birds housed here, the farm has range facilities for 2,000 turkeys on growing tests.**

from pilot studies conducted in these units are tested at the research farm.

Feeds for experimental rations are prepared in the feed mixing room, located in the basement of the research center. Test lots are analyzed for chemical components in the laboratories. Equipment includes a Hobart mixer for rations containing high percentages of fats and other liquids and a vertical twin-screw mixer.

At the Berkley research farm, studies are largely of a practical

(Turn to WIRTHMORE, page 98)

**SWINE BUILDING—Growing-finishing studies are conducted in this "porch-type" building. The 20 by 120 ft. unit accommodates 120 pigs in 12 pens. It is constructed of poles with a trussed roof covered with corrugated steel roofing. A truck dock is used for moving animals and feed. During summer the lower half of the rear wall can be raised to provide air movement. The concrete floor is pitched to a central drain and settling basin.**

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These economy fortifiers are rich in proteins, vegetable fats, and highly nutritious. They also contain essential Vitamin B-G Complex factors, as well as unidentified growth factors. Mixing Nadrisol or Produlac in your formula feeds will promote quicker growth, greater meat and egg yield and will produce feeds your customers want to buy. It's a good way to gain and hold customer acceptance.

Sold only to manufacturers of formula feeds.

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## Now—for the first time—

## CONTINUOUS HIGH-POTE

# BLACKHEAD and

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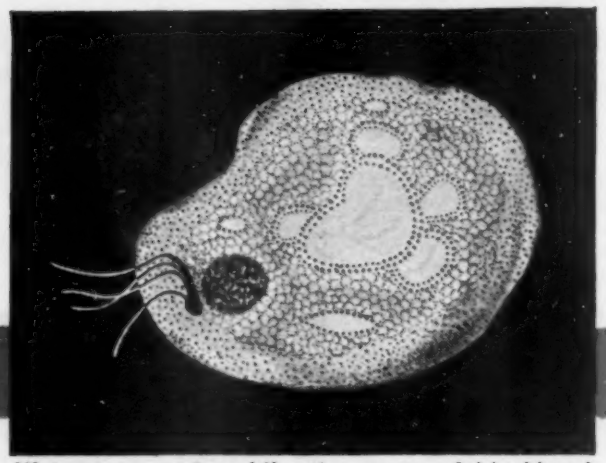


**Histomonas meleagridis,** the cause of blackhead infection in turkeys.

## Add HepZide® to your Starter, Grower, and Finishing Rations

(NITHIAZIDE)

Since its introduction in 1957, as a soluble powder for drinking water medication, HepZide has proved a highly effective compound for the **control** of both blackhead and hexamitiasis in turkey flocks. Now, after months of testing under rigid field conditions, a **new** pre-mix—HepZide Mixture "20"%—is available. Provide your growers with continuous, high-potency protection against costly outbreaks of these important protozoan diseases.

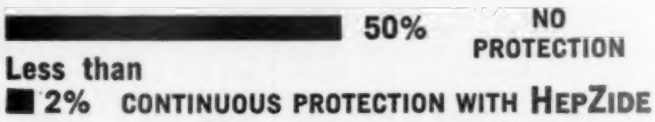
**HepZide Can Be Fed—With Complete Safety—To Turkeys of All Ages**—HepZide, a patented product of Merck, has demonstrated a remarkable degree of potency against the parasites responsible for blackhead and hexamitiasis. But, in marked contrast to other anti-blackhead agents, HepZide is safer in practical use—will not interfere with **growth, sexual maturity, subsequent egg production, fertility or hatchability.**

**Feed Consumption Remains At High Levels**—Reduced intake of medicated feeds sometimes presents a serious problem to growers in trying to finish birds with efficient feed conversion ratios. Not so with HepZide. Rations containing this compound at recommended levels are palatable, readily consumed by young, growing or mature birds. And sustained feed consumption helps poults make consistent gains in weight, means maximum protection against blackhead and hexamitiasis—from brooding to marketing.

CHART A

**HepZide checks blackhead, hexamitiasis losses**

Total Flock Mortality




These Beltsville White turkey broilers were sold at 16 weeks of age with an average weight of 8.07 pounds and a feed conversion of 3.15.

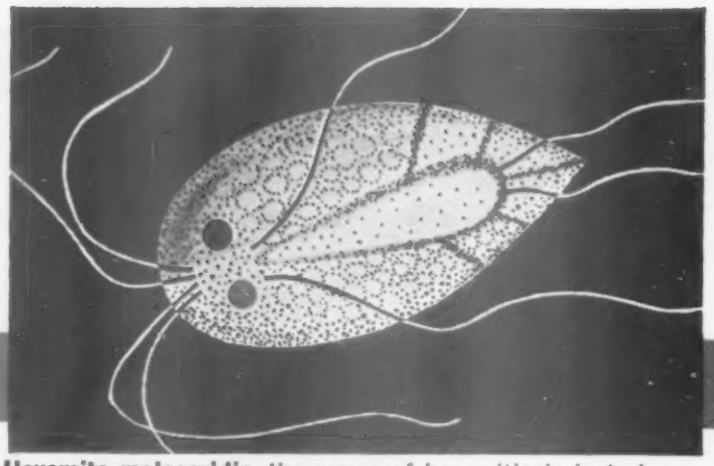
**HepZide Checks Blackhead Losses**

A wide range of effectiveness has been demonstrated by HepZide in a series of trials conducted under practical field conditions. On one farm (Chart "A"), one flock of Beltsville Whites had suffered 50 per cent mortality due to blackhead and hexamitiasis. A second flock of 9,000 Whites started on the same premises, with little or no clean up and disinfecting of quarters, was placed on rations containing prophylactic levels of HepZide from the time they were one day-old to 16 weeks of age. **The less than two per cent general mortality in this second flock** attests to the high degree of protection against these two protozoan diseases.

NCY PROTECTION AGAINST

# HEXAMITIASIS

IDE EFFECTS!



**Hexamita meleagridis,** the cause of hexamitiasis in turkeys.

CHART B*

## HEPZIDE HELPS GROWER MARKET HEAVIER BIRDS ON LESS FEED

**2,325 Broad-Breasted Bronze Turkeys**

| | |
|---|---|
| Birds Started | 2,325 |
| Birds Finished | 2,225 |
| Mortality (all causes) | 2% |
| Age When Sold | 24 weeks |
| Weight When Sold (toms) | 26.3 lb. |
| Weight When Sold (hens) | 16.5 lb. |
| Feed Conversion | 3.79 |

According to the pathologist supervising this trial the "flock had good weight, feed conversion and livability. There was no evidence of blackhead at any time."

**A continuous preventive program pays off**—Blackhead infections, no matter how mild, rarely confer immunity against subsequent attacks. And even light infections, or subclinical infections with no outward signs of disease, may result in mortality or serious setbacks in weight gains. In addition, blackhead and hexamitiasis strike birds at different ages.

The most practical and economical approach to the problem of blackhead (and hexamitiasis) is the continuous use of feeds medicated with HEPZIDE. Prophylactic levels of this compound will check tissue damage and mortality as a result of these diseases, will help your growers market heavier birds at an earlier age.

The results shown in Chart "B" are representative of those reported from flocks under varying farm conditions, fed rations containing low levels of HEPZIDE from the time they were placed on litter.

**This is a photomicrograph of an embryonated cecal worm egg (Heterakis gallinae).**

Cecal worm eggs, carrying blackhead organisms, can survive in the soil **and transmit the disease for periods up to three years!** On overcrowded, or contaminated ranges, continuous protection against blackhead losses may be obtained through the continuous use of feeds medicated with prophylactic levels of HEPZIDE. Merck & Co., Inc., Chemical Division, Rahway, New Jersey.

**Coccidiosis symptoms are sometimes difficult to detect—and, one sick poult can rapidly infect an entire flock.**

**S.Q.® (sulfaquinoxaline) added to your rations at low levels, will protect poults against profit-draining coccidiosis "breaks."**

**Are your customers interested in dual-action antibiotic fortification of their turkey rations? Recommend low-cost PRO-STREP® the effective combination of procaine penicillin and streptomycin sulfate in a ratio of 1:3.**

# HepZide

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*with* **THE MERCK MARGIN OF SURETY**

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*WHAT'S NEW IN FEEDING?*

# Putting Research to Work

**By Spencer H. Morrison, Ph.D., D.V.M.**

### Availability of Vitamin A and Carotene as Influenced by Soft Phosphate

● E. S. Erwin and H. M. Page, University of Arizona; Journal of Animal Science, Vol. 17, No. 3, August, 1958, pp. 662-666.

**ABSTRACT**

In vitro experiments were conducted to determine the adsorptive affinity of soft phosphate for vitamin A, carotene and alfalfa pigments. The binding capacity of the soft phosphate was decreased by the presence of moisture, and it is doubtful whether the presence of soft phosphate in mixed feeds would influence conventional carotene analysis. A decrease in particle size or an increase in amount of soft phosphate increased carotene adsorption.

Experiments were also conducted with feeder lambs for 45 days comparing the use of bone meal, soft phosphate and dicalcium phosphate as phosphorus supplements in a gin trash-barley type of ration (65% gin trash, approximately 22.3% barley, 10% molasses, approximately 1.4% urea, 0.5% trace mineral salt). All rations were equal in vitamin A and were low in natural pigments. The phosphorus level was calculated to be 0.15% in the bone meal and dicalcium phosphate diets, and 0.16% in the soft phosphate ration. Vitamin A was added to all rations at approximately 1200 I.U. per pound of feed in a protective gelatin type carrier. Five lambs were used per group and were self-fed the all-pelleted rations.

The average daily gains and feed per pound of weight gain on the various rations were: Bone meal, 0.32 and 11.19; soft phosphate, 0.275 and 14.69; and dicalcium phosphate, 0.524 and 8.45. Liver biopsy revealed that soft phosphate caused a significantly greater hepatic vitamin A loss in the 45-day period than either of the two other phosphorus supplements.

**COMMENT**

Although some work has been reported with cattle comparing the value of different sources of phosphorus, relatively little has been conducted with sheep. In most cattle work soft phosphate is reported as not being as well utilized as other sources of phosphorus when used as the chief source or sole source of supplemental phosphorus. (Ammerman et al., 1957; Long et al., 1956). However, the opinion is not shared by all workers (Tyznik, unpub.) that colloidal clay is poorer in availability. There is quite a bit of evidence indicating that imported rock phosphates may be satisfactory sources of phosphorus in beef cattle rations, other than those for calves. Among the more recent is (Long, et al., 1957) work with weanling lambs averaging 60 lb. but Ammerman et al. (1957) indicated significantly lowered retention of phosphorus when soft phosphates were used.

We need more information of the availability of the various phosphorus sources, since good quality phosphorus supplements are fairly expensive additions to the diet. Work is especially needed on various combinations of the cheap sources such as colloidal clay and raw phosphates and the more commonly available expensive ones such as dicalcium phosphate, defluorinated phosphates, and bone meal.

I don't know for sure. My guesses based solely on watching chickens eat are these: Yes, she can taste good mash, she can smell it. She likes freshly mixed mash because it doesn't stick to her tongue and it slides down her throat easily. (Cows like to graze at night when grass is wet — slips down easily. Humans like butter on bread for the same reason.)

I've seen poultrymen quit feeding a mash because its color changed. This doesn't mean the formula is different. It's difficult, if not impossible, for a mill to get every shipment of soybean oil meal, bran, alfalfa meal, etc., always the same color and consistency. The formula is the same but looks can change.

We tell poultrymen this: "Why not let the hens decide if the color and taste are o.k.? If your mash changes appearance but your birds keep right on eating it, you're o.k. Don't worry about it. They won't stop laying. If they refuse to eat it, call your feed man at once."

**Mash Can Be Too Coarse**

Mashes, if carelessly mixed sometimes contain large pieces of corn, whole kernels of wheat and oats, lumps of molasses, calf pellets, etc. When such mashes are fed right along, your layers will dive for these big pieces and you'll soon have many of your best birds in a neck moult. A good mash is so palatable and so well prepared that chickens can't sort it out — they eat it all with relish.

**Babcock Bessies Not Finicky Eaters**

Twenty years ago we bred out all the birds that turned up their noses at changes in feed color, consistency, etc.

You can move Bessies from pen to pen or even farm to farm and they will go right on eating, drinking and laying. The trick is to supply a high quality laying mash, plenty of hopper space and lots of clean, fresh water easy to get at and easy to drink.

Use Babcock Bessies. They will make your feed and care look good. Good feed and care will make Bessies look good.

**Bessies Have Excellent Livability**

We are very pleased with the excellent results that Bessies have produced at recently concluded Random Sample Tests. Their livability performances have been outstanding.

**WISCONSIN RANDOM SAMPLE TEST**—Only one bird died, and no evidence of picking in the pen.

**WESTERN NEW YORK RANDOM SAMPLE EGG LAYING TEST**—Not one bird died . . . the only pen in the first quartile to have this record.

*Please send for our catalog, poultry management literature, and name of nearby Babcock Bessie hatcheryman who can supply freshly hatched genuine Babcock Bessies.

U.S. Pullorum-Typhoid CLEAN

Babcock

BABCOCK Chicks

Babcock Poultry Farm, Inc. Box 286D Ithaca, N. Y.


## To Discuss Mixing at Washington Mill School

SEATTLE — Continuous vs. batch mixing will be one of the topics discussed at the Washington Feed Mill Production School, it was announced this week.

The 1959 school will be held Feb. 11-12 at the Hotel Leopold in Bellingham, Wash., under the auspices of the Washington State Feed Assn.

T. G. Burdsal of General Mills, Inc. (Sperry Division), San Francisco, will discuss the use of either continuous or batch mixing in the design or modernization of a feed mill. He will present his views on the types of situations in which the different mixing systems should be used.

In addition, announced J. G. Wilson, association manager, Mr. Burdsal will spend time in illustrating things to be considered when mixing sequence is modernized in today's feed mill.

The general chairman of the school is Mel Erickson, Nordquist Feed Mills, Redmond, Wash. Forrest Larson, Larson & Baardson, Tacoma, will act as coordinator and assist Mr. Erickson in developing the program.

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IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

# Texas Event Covers Nutrition Topics of Current Interest

By THOMAS E. LETCH
Feedstuffs Staff

COLLEGE STATION, TEXAS — Several topics of current interest to feed manufacturers were discussed at the recent Texas Nutrition Conference at Texas A&M College.

Among these were an evaluation of additives, controlled feeding, drugs in laying hen feed, hygromycin for poultry, unidentified factors, swine feeding practices, amino acids for swine, swine integration, additives for beef cattle rations and antibiotic potentiation.

Summaries of Texas conference talks follow (other reports were reviewed in the Oct. 25 issue of Feedstuffs):

**AN ECONOMIC EVALUATION OF CERTAIN FEED ADDITIVES FOR BROILERS—Arthur A. Camp, Texas Agricultural Experiment Station, Gonzales:** Certain feed additives were evaluated to determine their effects on pounds of meat produced per 100 lb. of feed. All diets were composed of practical ingredients.

In one series of tests several ingredients were substituted into an all-vegetable type diet containing 5% added fat, antibiotics, methionine, arsonic acid and all the vitamins and minerals known to be required by growing chicks.

The tests showed that either dried whey (3%), condensed fish solubles (3%), dehydrated kelp (1%), A streptomyces fermentation product (0.5%) or condensed whey solubles (3%) substituted into an all vegetable-type diet for growing chicks would significantly increase the amount of meat produced per 100 lb. feed.

In another series of tests, certain additives were incorporated into a commercial-type ration.

Oleandomycin added at either the 1, 2 or 4 gram per ton level was effective in improving feed conversion, the 4 gram level being the most efficient. The same was true of penicillin at either the 4 or 50 grams per ton level. The higher level was no better than the low level in this test. Sodium propionate (0.30%) or Aureomycin (50 grams per ton) fed either alone or in combination improved efficiency of feed utilization, the combination being better than either alone.

Trithiadol substituted into the diet at either the 0.10% or 0.15% level for Nicarbazin elicited a marked improvement in feed conversion. Furthermore, the combination of Trithiadol (0.10%) and Aureomycin (50 gm./ton) improved feed conversion when compared with the feed of Aureomycin alone but was no better than Trithiadol alone.

**THE EFFECT OF CONTROLLED FEEDING AND TYPE OF DIET ON THE PERFORMANCE OF HEAVY-TYPE LAYING HENS — Dr. L. D. Matterson, University of Connecticut:** From a study to find the effect of diet and feeding system on body weight, egg production, mortality, feed efficiency and other factors in meat-type White Plymouth Rock hens, the following conclusions were drawn:

(1) Ad libitum feeding of a higher energy diet increased body weight and mortality and maintained egg production on a hen-day basis, but not on a hen-housed basis.

(2) Controlled feeding of a high energy diet reduced mortality, controlled body weight gains and maintained egg production. These birds consumed 22% to 29% less feed than those fed ad libitum on the low energy diet.

(3) Ad libitum feeding of a low energy diet gave very satisfactory performance, but was markedly less efficient in terms of pounds of feed required per dozen eggs produced.

(4) Controlled feeding of the low energy diet was unsatisfactory and suggests that the energy tables used in calculating the rations are in error for some ingredients at least as applied to their value for mature poultry.

Two diets were used in the study. One was calculated to contain 857 and the other 1014 Calories of productive energy per pound (Titus).

**ENERGY RESTRICTION FOR LAYING STRAIN REPLACEMENT PULLETS—Dr. H. W. Bruins, Quaker Oats Co., Barrington, Ill.:** Three trials comparing energy restriction for growing laying strain pullets with ad libitum intake of a medium energy diet were made. Energy restriction was accomplished by the limited feeding of a medium energy diet and by full feeding a low energy diet. The following conclusions appear to be justified by the data:

(1) Average age at first egg can be delayed by restriction. Energy restriction by the use of low energy diets is less effective in this respect.

(2) Body weight is reduced by feed restriction. Low energy diets are intermediate in this respect.

(3) Birds restricted in energy intake by either method are more resistant to extreme heat but less resistant to extreme cold than full fed birds.

(4) About 8 lb. of feed per pullet may be saved by restricting feed intake.

(5) Pullets reared on an energy restriction program show a higher rate of survival in the laying house.

(6) Energy restriction during the growing period increases the number of eggs laid per hen housed.

**ANTIBIOTICS, ARSONIC ACIDS, AND NITROFURANS IN MATURE FOWL NUTRITION — Dr. C. W. Carlson, South Dakota State College:** Experiments were conducted during the first year of production to determine the effects of antibiotics, arsonic


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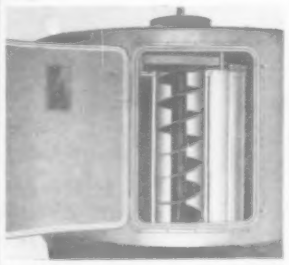

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acids and nitrofurans on the reproductive performance of laying hens.

Chlortetracycline, oxytetracycline, penicillin (V and procaine G), streptomycin, and oleandomycin, and arsanilic acid, furazolidone, nitrofurazone, and Nyastatin have been used in studies to determine their effectiveness in all-mash diets for laying hens. In the later studies, penicillin has consistently shown some detrimental effects, whereas the other supplements have shown promise as a result of their beneficial effects under some of the conditions reported. The amount, kind, and type of supplement to recommend for use may well be dependent upon each situation.

The continuous use of some broad spectrum antibiotic at a level of about 20 gm./ton or of a combination of furazolidine at 15 gm./ton with arsanilic acid at 90 gm./ton would appear to be warranted under most conditions. For treatment of various specific or non-specific disease situations, higher levels of the antibiotics including a combination of penicillin and streptomycin or the nitrofurans and arsonic acids may be warranted.

Further work is necessary to answer all of the questions involved. Nyastatin, or some antifungal agent, may be quite useful in combination with an antibiotic for improving egg production.

It would appear that antibiotics are still good insurance for maintaining high egg production and it is probable that a combination of antibiotics is more effective than any one alone.

**ANTIBIOTICS IN LAYING HEN NUTRITION—Dr. E. B. Patterson, Chas. Pfizer & Co., Inc., Terre Haute, Ind.:** The use of antibiotics for laying birds now appears to be applied more widely than at first.

In trials at the Pfizer agricultural research center, Terramycin at 100 gm. per ton, continuously or intermittently, increased egg shell breaking strength.

Antibiotics enhance egg production under many practical conditions. Optimum levels must be established in terms of economics.

The logical program for the use of antibiotics in an egg production program would be the continuous use of a broad-spectrum antibiotic at low levels throughout the entire egg production cycle of the hen. Then at times of stress, such as vaccination, housing time, weather changes and other predisposing conditions which render the birds more susceptible to attack by disease organisms, the use of high levels of antibiotics in the feed is recommended. If egg production tends to slump for no apparent reason, resumption of a high-level antibiotic program is recommended. Since subclinical diseases of non-specific origin may be responsible for a decrease in egg production, it is wise to use a broad-spectrum antibiotic in order to attack as wide a group of pathogenic organisms as possible.

**CONTINUOUS FEEDING OF HYGROMYCIN AS A POULTRY ANTHELMINTIC—Dr. J. H. Quisenberry, Texas A&M College:** An experiment was designed to test continuous hygromycin feeding for the control of the common internal parasites of poultry. Six lots of 180 pullets each were used. Two lots received the basal starter and grower ration. Two lots received this same basal ration plus 6 grams of hygromycin per ton. Two lots received the basal ration plus 12 grams of hygromycin per ton. Every four weeks samples of birds were killed from each of the six lots and the internal parasite counts for round worms, cecal worms and tapes were made.

At 22 weeks of age some of the birds were transferred to laying cages where production data will be obtained for a period of 10 to 12 months.

Results of the parasite counts obtained from the birds that were sacrificed during the growing and subsequent confinement periods suggest that hygromycin, particularly at the higher level, may have been effective

(Turn to NUTRITION, page 86)


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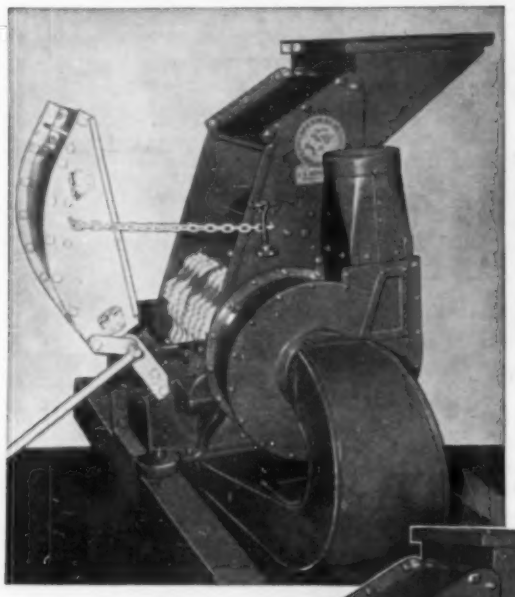

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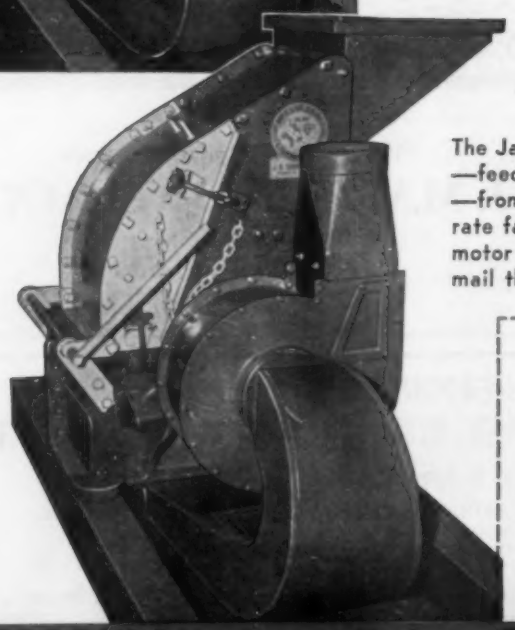

The Jay Bee Model W is available in three sizes —feed opening from 15½" x 12" to 26" x 12" —from 50 to 200 H.P.—with or without separate fan motor—with flat belt, V belt, or direct motor drive. . . . For complete information just mail the coupon below.

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# McMillen Opens New 'Auto-Syntronic' Plant

## Des Moines Mill Is One of the Most Highly Automated and Efficient Feed Manufacturing Plants in U.S. Today

By ROGER BERGLUND
Feedstuffs Managing Editor

Someone with a flair for the dramatic called McMillen Feed Mills' new plant in Des Moines "auto-syntronic." And that it is. (1) It is highliy automated; (2) operations are closely synchronized; and (3) all handling and processing are electronically controlled—adding up to "auto-syntronic."

The recently opened plant—one of

**The management team at the new Master Mix plant in Des Moines. Seated is the plant manager, Jack Chappell. Standing are Dick Sager (left), office manager, and George Maness, feed mill superintendent.**

the most efficient and highly automated feed production units in the country today — combines storage, conveying and mixing systems in a manner said to be unique in the industry.

Initial production calls for 200 tons of Master Mix concentrates or complete feeds in an eight-hour day. The feeds will be distributed throughout the state of Iowa by McMillen dealers.

The plant is operated by the McMillen Feed Mills division of Central Soya Co., headquartered in Ft. Wayne, Ind. This is the company's seventh feed mill and the first west of the Mississippi River.

Collaborating in the design of the mill were McMillen engineers and Sprout, Waldron & Co., Inc., of Muncy, Pa. Sprout-Waldron also had the major equipment contract, supplying such things as conveying, mixing, pelleting and grading machinery. Among other suppliers was the Richardson Scale Co., which provided all of the scaling equipment, including the electronic panel board for proportioning and mixing and the bagging equipment. William Knudson of Des Moines was the building contractor. The Day Co., Minneapolis, supplied the extensive dust control facilities.

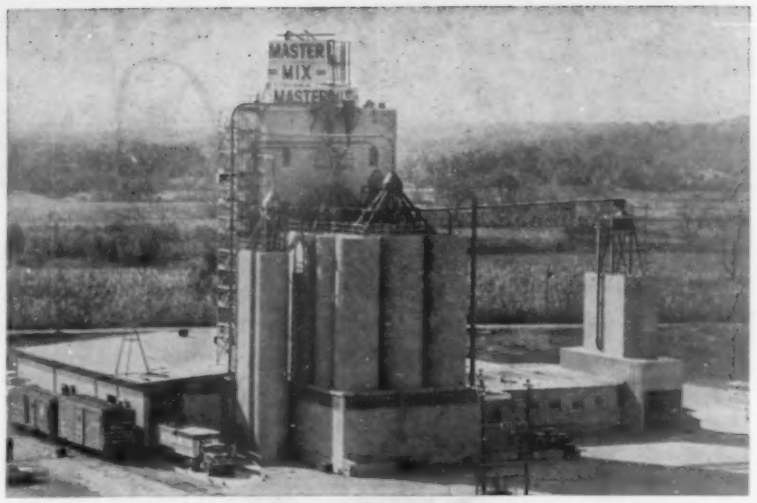
### Highly Efficient

The highly automatic mill will turn out feed with an undisclosed fraction of a man-hour of production labor per ton. The total administrative and production force at the plant initially is approximately 20 persons. A total of only 12 persons is required to operate the mill on a one-shift basis.

Situated on five acres of a 35-acre tract in northeast Des Moines, the new plant is designed for rail or truck transportation and for producing feeds in meal, pellet or crumble form. Finished products can be shipped in either bagged or bulk form at 100% of rated capacity.

The plant office is also headquarters for McMillen's Iowa sales staff. Glenn Warren is the district sales manager.

**An 18-ton bulk tanker moving into position for loading. The bulk loading bins are over a covered 50-ft., 50-ton truck scale. The open turnhead outlets are for additional bulk loading tanks to be installed later.**

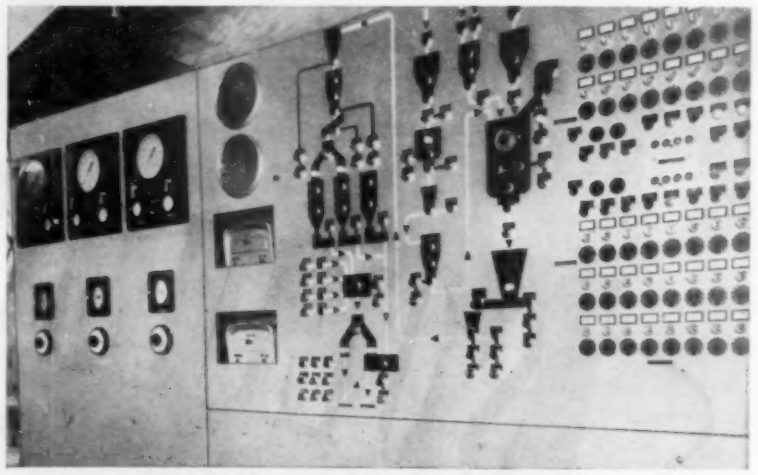



**A semi-aerial view of McMillen's new Des Moines plant showing car loading spots and truck hoist and part of the warehouse on the left; the grain and soft ingredient tanks and mill building in the center; and the office and bulk loading facilities on the right. Initial production calls for 200 tons of Master Mix concentrates or complete feeds in an eight-hour day.**

While this is basically a batch mixing plant (the first batch plant, incidentally, for McMillen), C. I. Finlayson, company production manager from Ft. Wayne, describes it as the "best of the batch system—for dry ingredients—and the best of the continuous—for liquid additions."

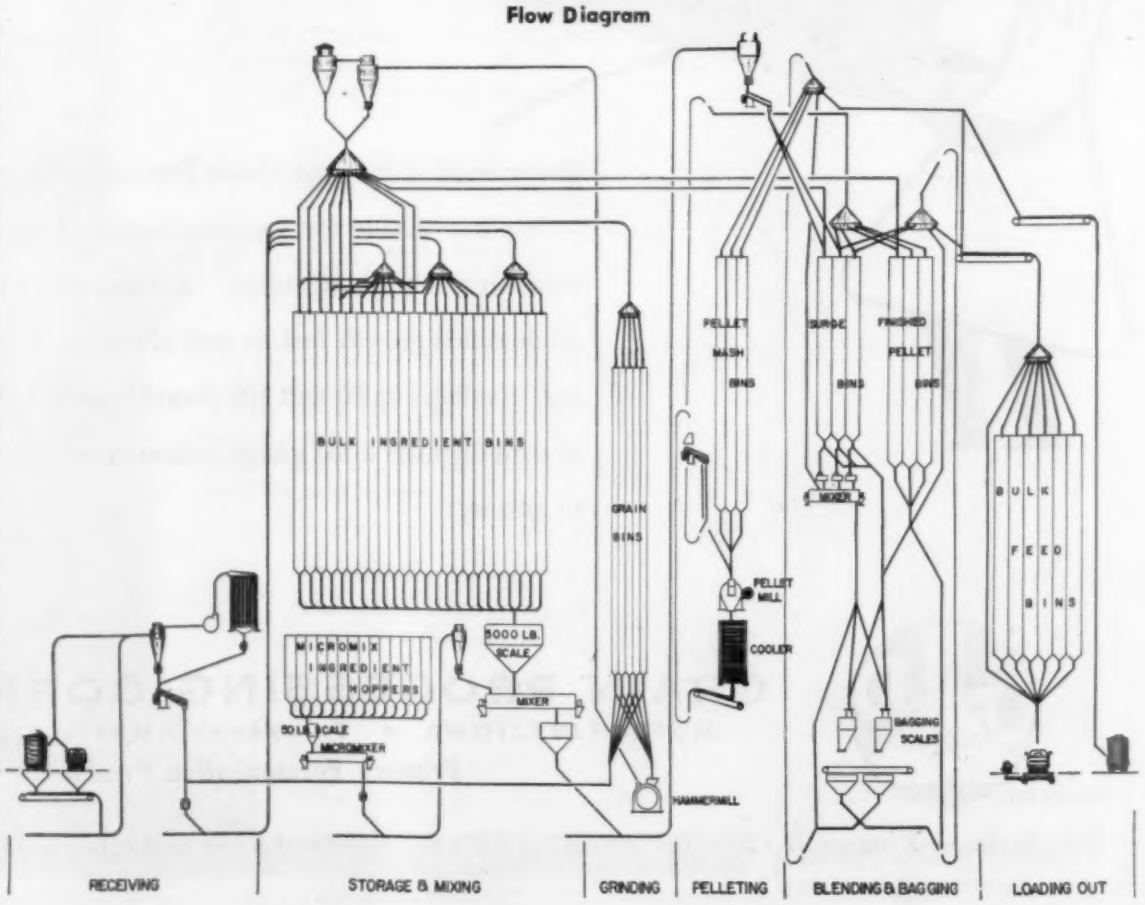
Speaking of combinations, the plant manager, Jack Chappell, describes the operation as a combining of standard equipment into a new, highly efficient and accurate system of handling and processing materials.

Everything in the mill from receiving to packing or bulk load-out is controlled automatically on panel



**This Richardson control panel is the heart and brain of the three-stage mixing system used to make feeds at McMillen's new plant. Dry and liquid ingredient flow, weighing and blending are all controlled and recorded here.**

### Flow Diagram



**Project engineer Bob Sittler (left) and field engineer Herman Von Gunten check a flow layout against the installed bin selection panel used in controlling both car and truck unloading.**

boards. In fact, control of the entire operation is centralized on the first floor, with none of the several panel boards more than 50 ft. from a central point. There are certain built-in controls, too, for eliminating the possibility of human error. Another feature is several special measures in the way of equipment and procedures to assure quality control.

### Use IBM Cards

The major control feature is the use of IBM cards, on which formulas are prepunched, in the main electronic panel board for proportioning and mixing.

In addition to this Richardson panel board, there are four graphic control panels (showing the flow on the panels) for other operations. These include panels to control receiving and distribution, through turnheads, of incoming ingredients; grain grinding and distribution, mixed feed distribution; and pelleting. Except for the packing and handling of bagged feed and the loading out of bulk feed, everything in the mill is controlled from these panel boards. The Frank Electric Corp. of York, Pa., provided the wiring and the control panels other than the mixing panel. For anyone interested in statistics, there are 192 motors, 315 starters and 71 miles of wiring in the plant.

Another indication of these days of automation is the fact that the plant employs a mechanical engineer to direct operation of the main panel board as well as do other things in the electronically controlled mill.

The warehouse and mill building are of concrete block, steel and "Galbestos" construction, with the upper part of the manufacturing section clad in asbestos-coated galvanized iron. Ingredients are stored in outside steel tanks above the proportioning and batch mixing equipment. Total bulk storage capacity for grains and soft ingredients is approximately 1,000 tons. Bulk finished feed bins hold 270 tons, with provision for expansion. There are five grain tanks, 24 soft ingredient tanks, 3 surge bins, 3 pellet mash bins, 3 finished pellet bins, and 6 bulk truck loading bins. Throughout the plant, distribution of materials is remotely controlled through turnheads. Sprout-Waldron pneumatic systems are used to elevate incoming ingredients and feed coming from the batch mixer. The bagged feed warehouse, where feeds are handled on pallets with forklift trucks, has space for 650 tons.

**Receiving and Storage:** With the exception of a few low-percentage ingredients, all materials are received and handled in bulk. Grains and other dry ingredients are unloaded by means of a pneumatic system directly from cars, or a standard track hopper, or a 50-ft., 50-ton Kewanee truck dump. After passing through a magnetic separator, ingredients enter a pneumatic conveyor system. The air and grains or ingredients are separated in a cyclone; the ingredients pass through a scalper and the air goes through a stocking dust filter. The stream then goes to a separate pneumatic system which moves the material to any of four pneumatic lines. These elevate to a height of more than 100 ft., where remotely controlled turnheads direct the flow into any of 29 storage bins. These bins are either 12 ft. square or 12 ft. in diameter and 40 ft. in height. The rectangular bins each have four compartments.

**Pre-punched IBM formula cards actuate the master control panel in proportioning and blending operations. In this picture a formula card for use in the panel's card "reader" is being prepared in the plant office.**

**Liquid Ingredients:** Liquid ingredients enter the plant through a 4-in. receiving line. An adjacent steam line permits tracing during flow to storage or heating of liquids being received.

From the tank car or truck, liquids pass through a two-position, three-port valve, and on through a strainer to a Moyno pump that delivers them to a liquid turnhead and on to any of four 12,000 gal. storage tanks in the basement of the plant. Each tank, though an integral unit, combines a top storage section and a bottom supply section. Special baffles maintain the liquid at different temperatures in each section.

**Circularly arranged low-percentage ingredient hoppers. Low and high percentage ingredients are weighed and mixed separately and simultaneously, then blended together in the main Sprout-Waldron horizontal batch mixer.**

**Hopper and scale assembly for the low-percentage ingredient mixing system. Access doors in the hoppers permit emptying of individual ingredient hoppers if ingredient changes are necessary. The charge from a miniature mixer for low-percentage ingredients is air-conveyed to the main mixer. (See story for details on mixing stages.)**

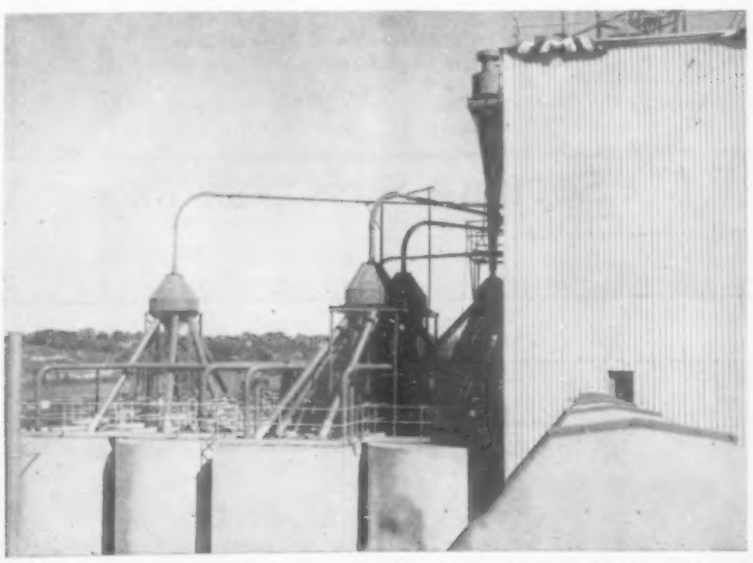
**Grinding:** Whole grains are gravity-fed to a 75 h.p. Prater hammermill, where they are ground and air-conveyed to ground grain bins. Where whole grains are called for in some feeds, the grinding operation can be by-passed and the grain conveyed directly to ingredient storage bins. Like other parts of the plant, the grinding and conveying of grains are all remotely controlled from a first floor panel board.

**Mixing:** Mixing operations are carried on in three stages: Mixing of high-percentage ingredients and vitamin feeding oils; mixing of low-percentage ingredients or micro-ingredients; and a final blending of the dry mixed feed and remaining liquids, including molasses, fish solubles and fats.

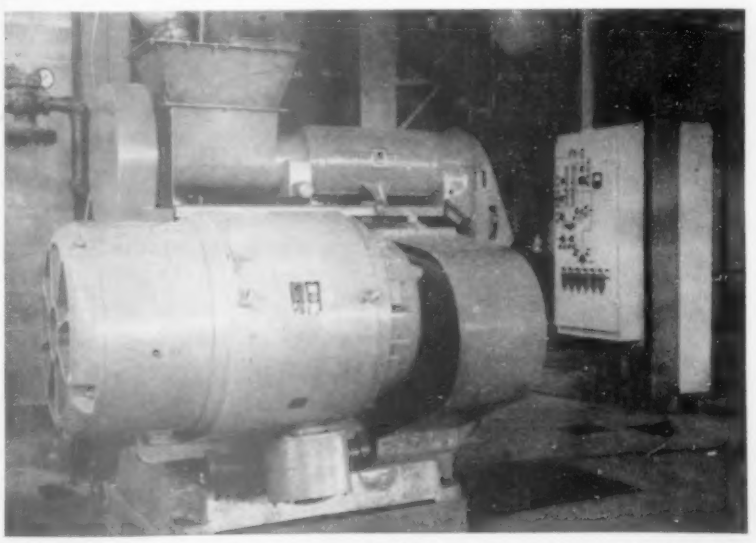
The heart of the mixing operations is the Richardson electronic panel

(Turn to page 22)

**It would take more than a roadmap to figure out which wires went where and why. This is a partial interior view of the 14-ft. electronic brain which controls proportioning and mixing automatically.**



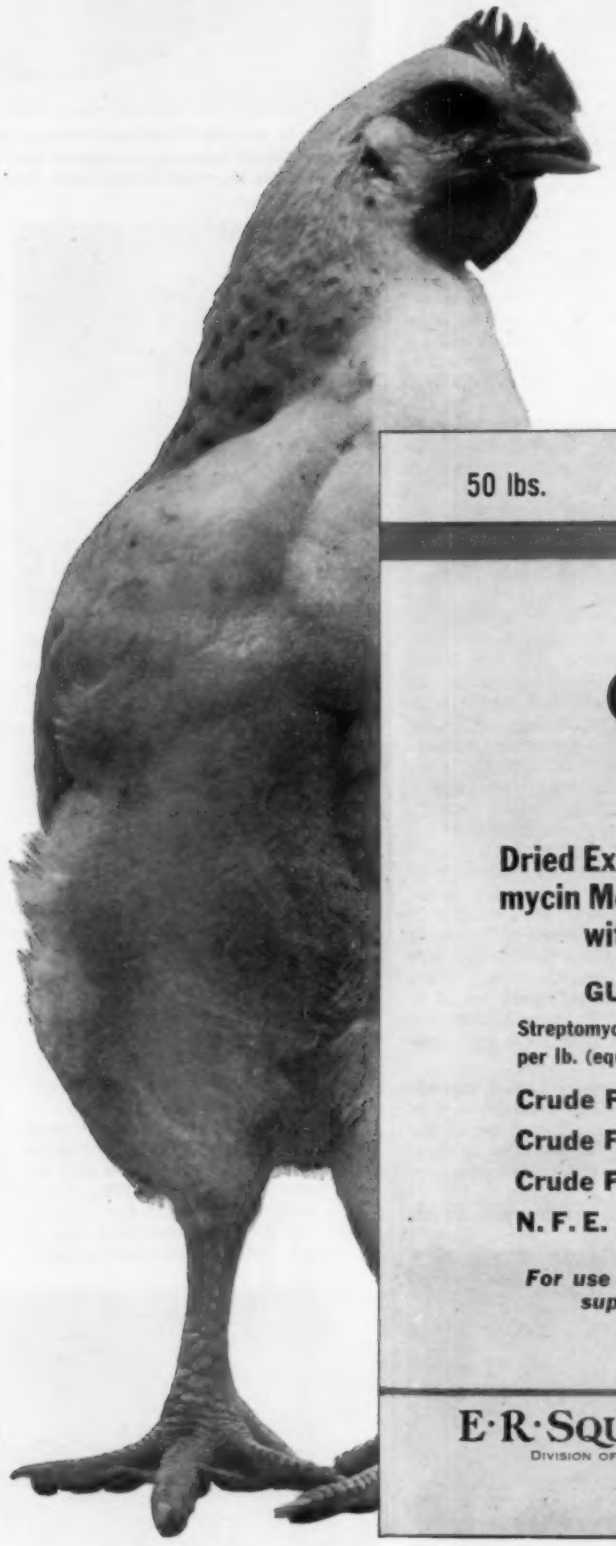
**A portion of the turnheads and distribution spouts for the plant's grain and soft ingredient tanks as seen from the top of the bulk loading station. The conveyor on the lower right delivers finished feeds from the mill proper to the bulk loading bins.**



**The Sprout-Waldron pellet mill is controlled by the panel board in the right background. Pelleting, pelleted feed flow and desired storage location are all depicted on the board.**

# FIGURE

## in your



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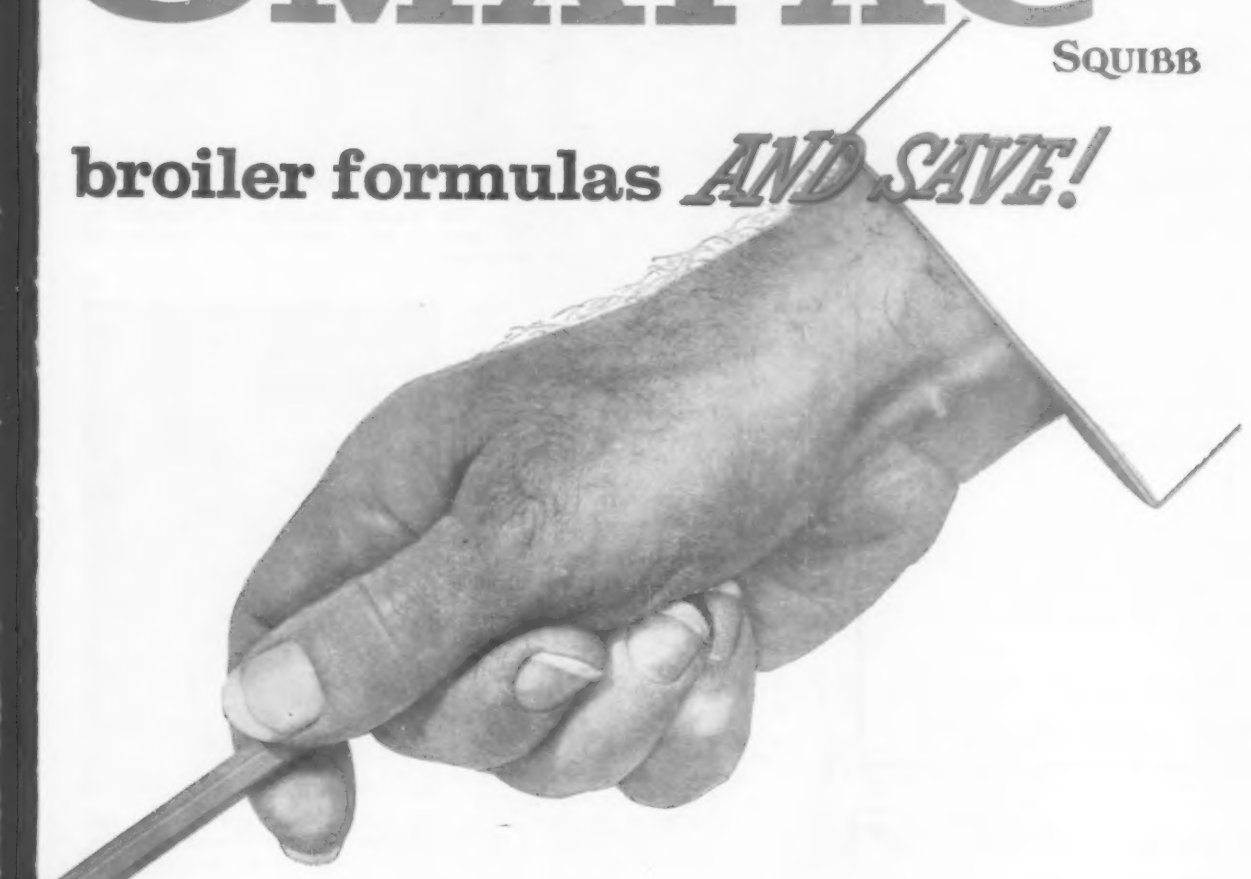

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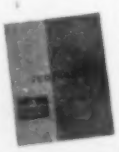

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FULL COLOR HOT SPOT BROCHURE
*— learn all the facts —*

### HOT SPOT ENGINEERED AERATION

ENGINEERED Aeration is best — best because it is made to order for your own storage house. You must have the correct air flow rate for your own particular structure and for the type of grain most commonly stored before your aeration system can be reliably effective. With HOT SPOT ENGINEERED AERATION, you know all important factors have been taken into consideration in the design of your system — and you know you are getting the most effective system at the lowest possible cost. Get all the facts today by mailing the coupon below.

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**HOT SPOT DETECTOR, INC.**
WORLD'S LEADING MANUFACTURERS OF TEMPERATURE MEASURING SYSTEMS
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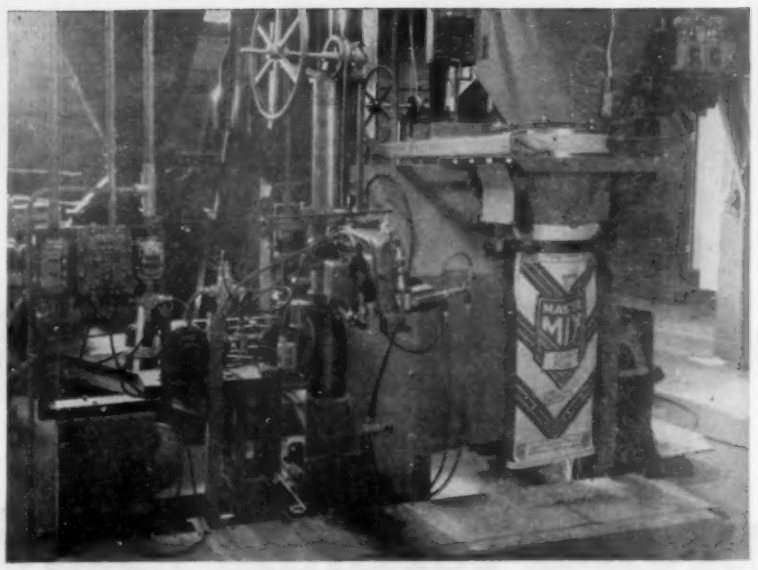
To receive full information about the Hot Spot Detector System, just clip this coupon, attach to your letterhead, sign and mail to us. No obligation, of course.

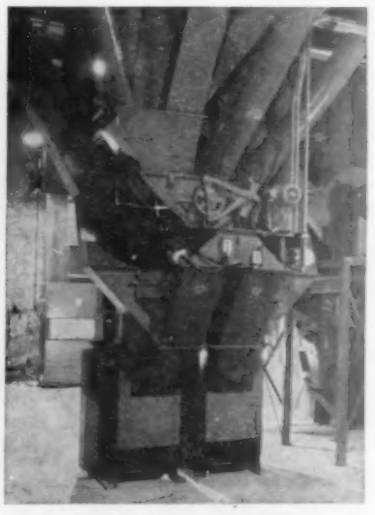
☐ I am interested in Hot Spot Temperature Systems.
☐ I am interested in Hot Spot Engineered Aeration.
☐ I am interested in both.
(Please check one)

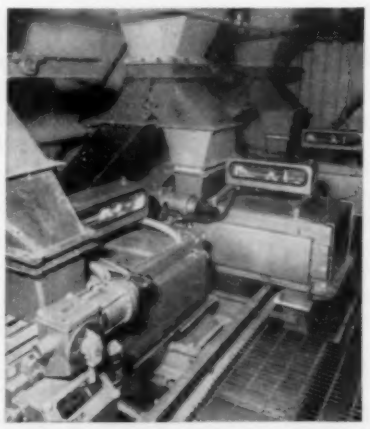
**Automatic bagging scale assembly. The bagging operations are handled on two Richardson automatic scales. Bags are belt-conveyed up to a table and then palletized for loading out or storage.**

board which "reads" pre-punched IBM formula cards. (The panel board also can be operated manually.) The cards, containing formulas approved by McMillen Feed research headquarters of Decatur, Ind., are punched in the office and merely inserted into the panel board. Two cards are used, one for the principal ingredients and one for the micro-ingredient system. The two cards are interlocked so that the right cards have to be used to make the system operate. These cards actuate the master control panel for addition of both high and low percentage ingredients.

In the case of high-percentage ingredients, the panel controls screw feeders delivering the ingredients to a 5,000-lb. hopper scale beneath the storage bins. When the card has been completely "read," and the hopper scale contains the desired ingredients in the proper amounts, the hopper scale discharges into the 3-ton horizontal batch mixer. This system has an accuracy of 0.1%.



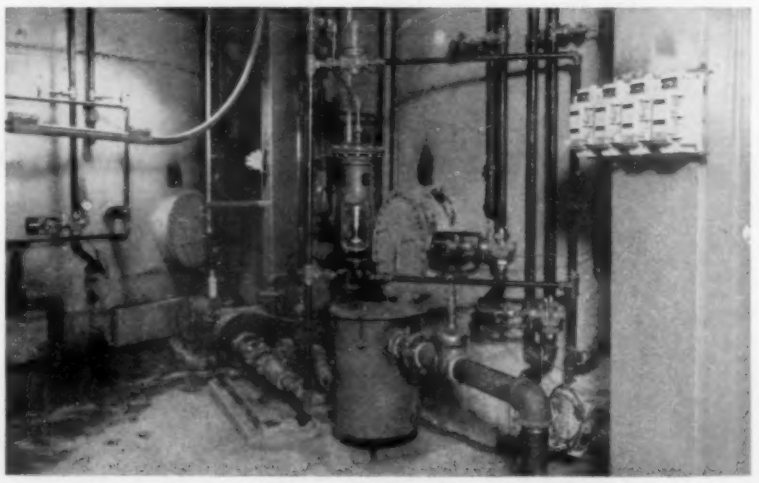
**Lower level spout and elevator distribution assembly showing discharge spouts coming from bagging scales which permit by-passing of bagging operation and conveying to bulk load-out or pellet supply bins. Other spouts deliver pelleted feeds to bulk pellet leg for load-out or storage.**



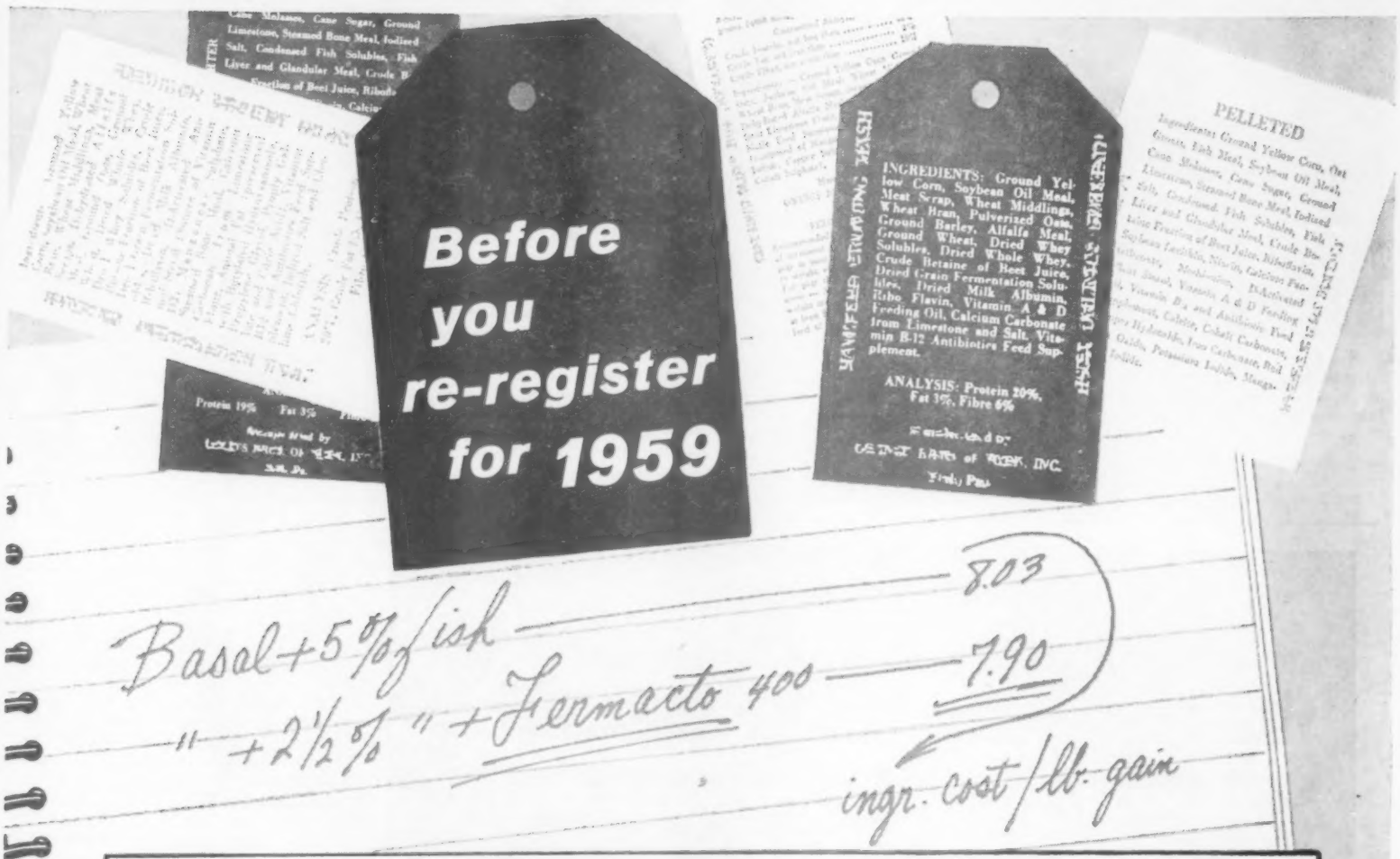
**Merchen feeders are used to deliver primary blended feeds to high-speed mixers where final liquids are added.**

Meanwhile, a separate and similar proportioning operation is carried on for the mixing of low percentage ingredients. A system of Syntron vibrating feeders delivers the ingredients from a series of 16 circularly arranged hoppers to a 50-lb. hopper scale located close to the main hopper—all automatically, too. The materials are then discharged into a specially designed stainless steel 3-cu. ft. mixer with a clearance of 3/1,000 in. This system has an accuracy within .05 lb.

The charge from the miniature mixer is air-conveyed to the main mixer, and the two charges are blend-



**Three of the liquid storage tanks and some of their electro-hydraulic controls located in the plant's lower levels.**


Before you re-register for 1959
INGREDIENTS: Ground Yellow Corn, Soybean Oil Meal, Meat Scrap, Wheat Middlings, Wheat Bran, Pulverized Oats, Ground Barley, Alfalfa Meal, Ground Wheat, Dried Whey Solubles, Dried Whole Whey, Crude Betaine of Beet Juice, Dried Grain Fermentation Solubles, Dried Milk Albumin, Ribo Flavin, Vitamin A & D Feeding Oil, Calcium Carbonate from Limestone and Salt, Vitamin B-12 Antibiotics Feed Supplement.
ANALYSIS: Protein 20%, Fat 3%, Fibre 6%
PELLETED
Basal + 5% fish — 8.03
" + 2½% " + Fermacto 400 — 7.90
ingr. cost / lb. gain

*consider these farm-tested*
BORDEN *Feed Supplements...*
*to cut your costs without sacrificing performance*

**FERMACTO 400** — the new multiple blend of fermentation factors

**MG 2X 400** — economical new blend of concentrated whey and fermentation factors

**MG 2X-AP** — all-purpose poultry feed supplement providing MG 2X 400 plus extra fish factor and essential micronutrients

**OMNI-MIX** — complete whey-fish-fermentation mix plus micronutrients, for economy plus quality in poultry feeds

**BORDEN'S 300** — economical laying mash supplement providing Fermacto 400 plus micronutrients

***also*** — supplements for hog, cattle, and small animal feeds, providing varying necessary levels of unidentified growth factors, antibiotics, and other micronutrients

THE *Borden* COMPANY
FEED SUPPLEMENTS DEPARTMENT
350 Madison Avenue • New York 17, N. Y.

Laboratories and test farms at Elgin, Illinois

Backed by Borden research...serviced by trained nutritionists... supported by the industry's finest "personalized" feed promotion programs...realistically priced for profitable performance

**Part of the scale room showing a "print-o-matic" scale and centralized air valve control center for loading bulk trucks.**

ed together, along with vitamin feeding oils.

Addition of liquid during the primary blending stage is accomplished by electronically proportioned metering into a 30-gal. liquid surge tank. From this tank, through the use of interlocked pressure switches and solenoid valves, the liquid is handled like any other ingredient on the master programming console.

The feed is discharged into a surge hopper beneath the mixer. During the first two stages of the three-phase mixing cycle, there are three formulations being produced, Mr. Finlayson pointed out—one being weighed, another being mixed, and a third in the surge hopper. Thus, he said, the precision of batch mixing is combined with the volume of continuous-flow methods.

From the surge hopper, feed is air-conveyed to the top of the mill, where it is again scalped and discharged into surge bins. Merchen gravimetric feeders deliver the dry feed to a Sprout-Waldron high-speed mixer where remaining liquids are electronically metered into the formula. The feed then goes through a double-agitator mixer for final blending. High-molasses feeds are sacked off directly; others go through the rest of the handling and processing. Fat is added at 180° and fish solubles and molasses at 110°. Pre-set proportion dials call for a definite amount of the final liquids. The electro-hydraulic Askania metering system delivers the liquids for final mixing, and at the same time the amount is indicated and recorded on the master control console.

The whole mixing system has built-in controls. Even with the complexity, the control system makes changing of formulas just a matter of seconds. The system will recycle automatically on any desired number of batches of the same formula, or will run just one batch at a time.

Following final blending, the feed may be bagged off, by-pass the bagging scales and be sent to bulk truck or car loading, or be conveyed to pellet supply bins.

**Pelleting:** Feed to be pelleted or crumbled discharges from overhead supply bins to a 100 h.p. Sprout-Waldron pellet mill and then through a vertical cooler. Pelleting capacity is 10 tons per hour. Following cooling, the pellets are elevated, pass through a feeder to, or can by-pass, the crumblizer. After grading, pellets or crumbles go to finished pellet bins or to surge bins for use in formulations requiring pellets. All of this operation is directed from a first floor panel board.

**Bagging:** Bagging is handled on two Richardson automatic bagging scales. One of the features of the bagging facilities is an automatic tagger. Bagging with 50-lb. papers can be done at a rate of 36 tons per hour. The bags are belt-conveyed up to a table and then palletized for loading out or storage in the warehouse area directly adjoining the manufacturing section.

**Loading out:** Bagged feeds are loaded out directly from the bagging operation or from warehouse supplies. Bulk feeds can come directly from production or from bulk loading bins over a covered 50-ft., 50-ton truck scale. The bulk truck loading operation, adjacent to the plant office, is controlled from a scale room in the office proper. Loading control valves and weight recording equipment are within easy reach of the operator. Feed for bulk loading of rail cars passes through a turnhead at the top of the mill and is directed to a conveyor belt and gravity discharge spout on the opposite side of the plant. Initially it is thought that about 50% of the output will be in bulk, with this percentage expected to increase.

**Quality Control:** A number of features in the plant in connection with quality control were pointed out by Mr. Finlayson and other engineers. These include such things as:

1. The interlocking and built-in controls in the proportioning and mixing of both major ingredients and micro-ingredients.
2. Use of a 5,000-lb. scale for the main dry ingredients to get greater accuracy even though this may mean not quite a full 3-ton batch even after addition of liquids and low-percentage ingredients.
3. Close accuracy and clearance in the micro-ingredient mixing stage, and use of stainless steel throughout this special system.
4. Use of air to convey the mixed feed to prevent contamination.
5. Use of "floating" boots in legs so that there is an absolute minimum of residual material and easy clean-out.
6. Final blending of liquids and dry ingredients in continuous mixers.
7. Re-screening of pellets from the finished pellet bins before sacking.
8. Use of totally enclosed conveyors, air and magnetic separators, and a multiple scalping system.
9. Use of no screw conveyors after feed is mixed—use of belts, pneumatic conveying and the special bucket elevators in further handling.
10. Centralization of all controls for better supervision of all operations.

Yes, it all adds up to an "auto-syntronic" operation—the latest in automatic, highly efficient feed manufacturing—at this newest of McMillen's seven feed plants, which can combine to produce some one million tons of Master Mix concentrates and complete feeds annually on a one-shift basis, for distribution in 30 states.

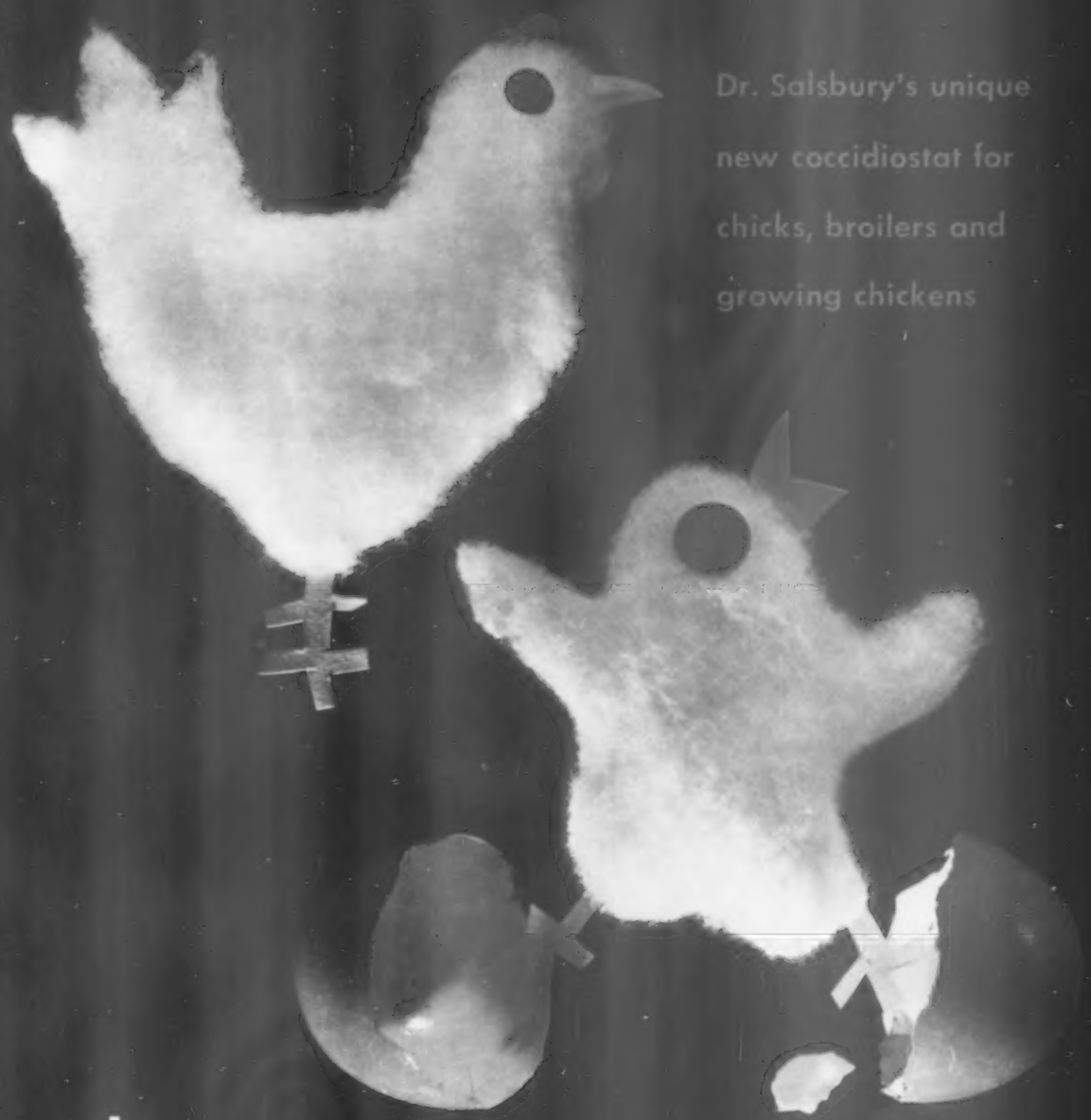

REACH FOR THE SCHENLEY CORN DISTILLERS DRIED GRAINS, PARDNER!

I wish my folks had known about Schenley Farm Feed Products. I am an almost extinct longhorn steer in the Wichita Mountains. My advice to other animals who do not want to share my fate: Use SCHENLEY CORN DISTILLERS DRIED GRAINS. They are specially processed to retain all nutritional values, are palatable to the animal, are an established ingredient in dairy feeding, are fairly and realistically priced.

Schenley Distillers Inc.
FARM FEED DIVISION
26 East Sixth Street
Cincinnati 2, Ohio
Telephone MAin 1-3170

...PROVED ON MORE THAN 100 MILLION BIRDS!

# Unistat®



Dr. Salsbury's unique new coccidiostat for chicks, broilers and growing chickens

Dr. SALSBURY'S LABORATORIES

DETACH INSERT AND FILE

# Growers say Unistat is best coccidiostat yet...

The true value of any new poultry health product is never really known until it has been widely used in the field—under all kinds of conditions. **Grower experience is what counts.** Growers must **know** that Unistat not only controls coccidiosis but does so at a substantial profit to them. Then and only then should you use it in your feeds. Unistat has now been fed to more than 100 million birds. The following are typical of many letters being received at Dr. Salsbury's Laboratories from large commercial poultrymen (names on request).

### DELAWARE

*"Our feed efficiency has improved more than 10 points over the same period of last year while coccidiosis has not been a problem with us. We feel that the pigmentation, finish, and quality of our birds has been greatly improved with Unistat feed. Unistat is now in our ration 100%, but we field-tested a number of coccidiostats before we made this change." (This is from an independent grower raising 1,000,000 birds a year.)*

### NORTH CAROLINA

*"This is the first flock of broilers I have ever grown without trouble from coccidiosis. These birds had better color than birds grown before. I am completely satisfied with the results I have gotten from Unistat." (The flock referred to had a feed conversion of 2.33—or, 43 lbs. of meat per 100 lbs. of feed. Birds were sold at 9 weeks and 6 days of age; average weight was 3.61 lbs.)*

### GEORGIA

*"I switched my entire operation to Unistat in February, 1958. Since making this switch, I have had less trouble with coccidiosis, with resulting better weights and lower feed conversions. The broilers I am marketing show a definite improvement in pigmentation and quality. Medication costs since February have been less than at any comparable period since I have been in business." (This operator feeds out an average of 80,000 broilers a week.)*

***These grower experiences are why—***

## No major feed company has ever withdrawn Unistat from its feed

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DR. SALSBURY'S

# Unistat

## PROVIDES SUPERIOR PROTECTION AGAINST COCCIDIOSIS, PLUS OTHER IMPORTANT PROFIT BENEFITS

Unistat is a yellowish, free-flowing powder—a feed additive that blends easily. It is compatible with minerals, vitamins, antibiotics and other normal feed ingredients. Chemically, Unistat is a unique combination of active ingredients—drugs chosen for their specific effect in complementing each other. They work together as a team, so that this new coccidiostat is able to provide far more protection than any single drug, chemical complex or compound. Unistat's formula includes 3,5-Dinitrobenzamide, Acetyl-(paranitrophenyl)-sulfanilamide, and 3-Nitro-4-hydroxyphenylarsonic acid.

Unistat is recommended for coccidiosis prevention, growth stimulation, improved feed efficiency, and better pigmentation in chicks and growing chickens. **Use at the rate of 1 lb. per 1,000 lb. of an all-mash ration. Give Unistat for starting baby chicks and continue through the growing period.**

3,5-Dinitrobenzamide, a relatively new organic compound, along with the other active ingredients of Unistat, makes this product highly effective against all major economic species of coccidia.

- PREVENTS COCCIDIOSIS
- PERMITS IMMUNITY
- STIMULATES GROWTH
- INCREASES FEED EFFICIENCY
- IMPROVES PIGMENTATION

DETACH INSERT AND FILE

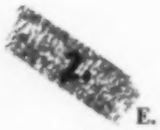
# coccidiosis

## A TRIPLE THREAT TO POULTRY PROFITS

Coccidiosis is one of the commonest and costliest of all poultry diseases. It causes annual losses of many millions of dollars. All ages and kinds of flocks are susceptible—baby chicks, pullets, broilers, and layers. Prevention is the best way to protect birds—and profits. Three kinds of coccidiosis cause the most loss. All belong to the genus *Eimeria*. And all are microscopic, single-celled organisms.

1.

**E. tenella.** This is the cause of bloody cecal coccidiosis and can kill birds. It occurs mostly in young chicks and is especially deadly after the first two weeks. Birds huddle, their heads drawn in, their feathers ruffled. Bloody droppings are a well-known symptom.



**E. necatrix.** This organism causes acute or bloody intestinal coccidiosis. Death losses are frequently quite high. General symptoms are about the same as for cecal coccidiosis (described above) except for ballooned intestines filled with bloody mucus.

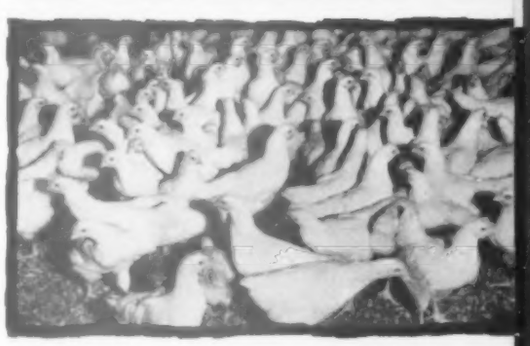
**E. acervulina.** This coccidium is the most common. It may cause chronic intestinal coccidiosis or the disease may be acute, causing growing chicks to lose as much as 40% of their body weight in 4 or 5 days. In either case, it is characterized by general unthriftiness among birds. Although mortality is usually low, birds are slow to regain thriftiness. Many of the serious outbreaks during the rainy season of 1958 were caused by **E. acervulina.**

## field trials and laboratory tests prove

# UNISTAT'S EFFICACY

Unistat was tested under the most rigorous laboratory conditions to determine its efficacy as a coccidiostat and its other effects on birds. The table below shows that Unistat, under experimental conditions, was highly effective in preventing mortality due to the three types of coccidiosis that cause the most economic loss. Unistat substantially maintained normal droppings and test birds enjoyed good comparative weight gains in the presence of massive infection. Complete data on this and other tests are contained in Unistat Feed Manufacturer's Guide, available from Dr. Salsbury's Laboratories (see order form on inside back cover).

Widespread field trials confirmed these test results. Millions of birds have now been fed out on Unistat. Grower experience and records indicate that under varying conditions—weather, infection, feed, etc.—Unistat provides a high degree of protection against the important forms of coccidiosis. You can use it with confidence. It has been proved on more than 100 million birds.



**EFFICACY OF UNISTAT (0.1% IN FEED) IN THE PREVENTION OF COCCIDIOSIS DUE TO EIMERIA TENELLA, E. NECATRIX, AND E. ACERVULINA**

| Species of Coccidia | Number of tests | Number of Chicks Used | | | Coccidiosis Mortality | | | Gains as percentage of noninfected control | Comparative Droppings Score (%) |
|---|---|---|---|---|---|---|---|---|---|
| | | IM | IC | UC | IM | IC | UC | | |
| E. tenella | 10 | 54 | 56 | 56 | 0 | 21 | 0 | 99.8 | 68 |
| E. necatrix | 11 | 78 | 79 | 79 | 11 | 56 | 0 | 47 | 47 |
| E. acervulina | 7 | 39 | 40 | 40 | 0 | 17 | 0 | 86 | 100 |

*IM: Medicated-Infected; IC: Nonmedicated-Infected; UC: Nonmedicated-Noninfected.*

## Proved effective against all 3 species under exacting laboratory conditions

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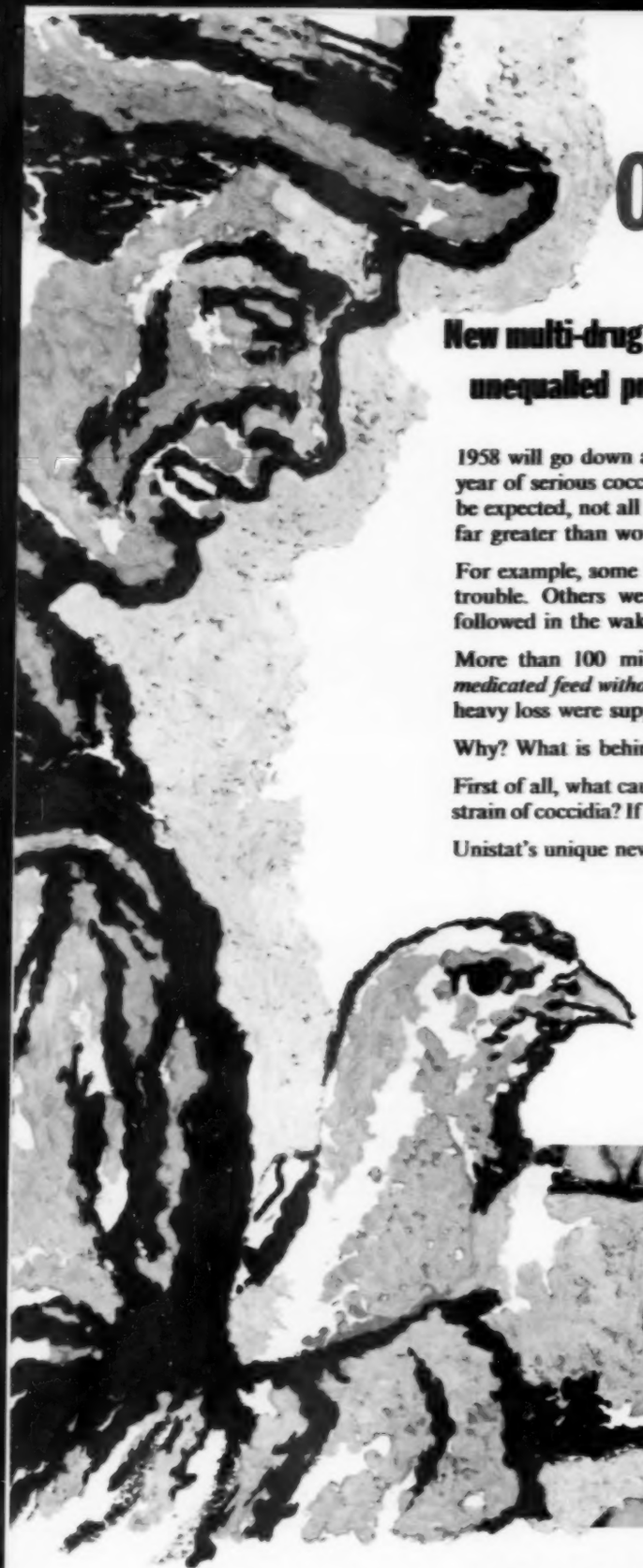


# Only Dr. Salsbury's

## New multi-drug formula, fed to over 100 million birds, gave unequalled protection during months of rainy weather

1958 will go down as one of the wettest years in recent history. Also, it was a year of serious coccidiosis outbreaks during the spring and summer. As would be expected, not all flocks were affected similarly. The difference, however, was far greater than would be expected by chance alone.

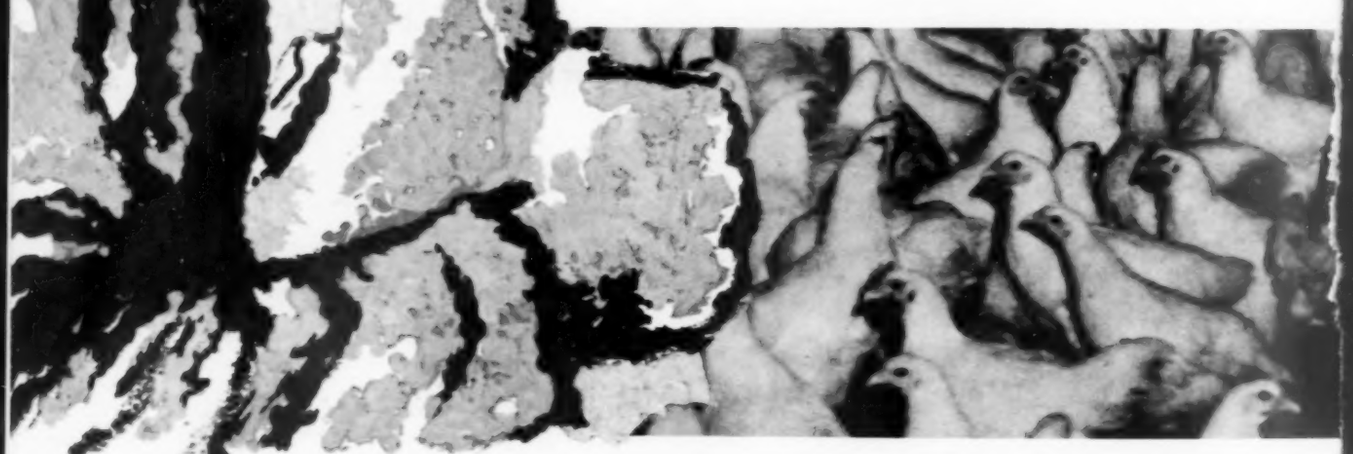
For example, some flocks went through the rainy, humid weather without any trouble. Others were decimated. During the dozens of investigations that followed in the wake of these losses, one fact stood out:

More than 100 million chicks and growing birds were *raised on Unistat-medicated feed without serious outbreaks*, while many of the flocks that suffered heavy loss were supposedly protected by other feed additive coccidiostats.

Why? What is behind these significant differences in efficacy?

First of all, what caused the breaks? Was it weather—and an unusually virulent strain of coccidia? If so, why didn't the Unistat flocks get hurt the same as others?

Unistat's unique new formula is the difference. Unistat contains a combination of active ingredients because *no compound, complex or other single chemical entity has been found to be equally effective against all important species of coccidia in chickens.* But Unistat, with its unique multi-drug character, is highly effective against all major economic species—making it of maximum value to the poultryman, which is the main reason for its growing popularity this year. And this, in turn, is why you'll want Unistat in your poultry feeds.



# Let Unistat give your

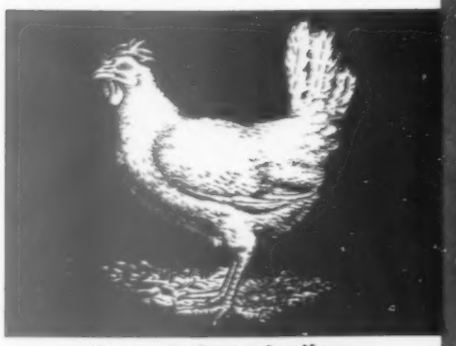
# Unistat stood the test so well

## Balanced protection permits birds to develop their own immunity

Unfortunately, many coccidiostats protect birds only while the drug is being fed. That is, these drugs prevent the disease so completely that birds cannot develop their own lasting, natural immunity. Thus any gaps in drug administration pose an unnecessary disease loss risk.

All these points are evident in grower demands for a coccidiostat that not only prevents death loss in exposed birds but also permits birds to develop immunity through a controlled, sub-clinical infection. *Unistat meets this exacting requirement precisely.* It lets birds have a mild infection, just as a small-pox vaccination causes a mild form of that disease to humans. In much this same way, Unistat enables birds to acquire specific immunity when exposed to infection while receiving the medication—thus preventing the disease after the medicated feed has been discontinued.

Unistat offers no miracle . . . But it does give growers the economical *balanced* protection they are looking for.



Too much protection—
NO IMMUNITY

Not enough protection—
DEAD BIRD

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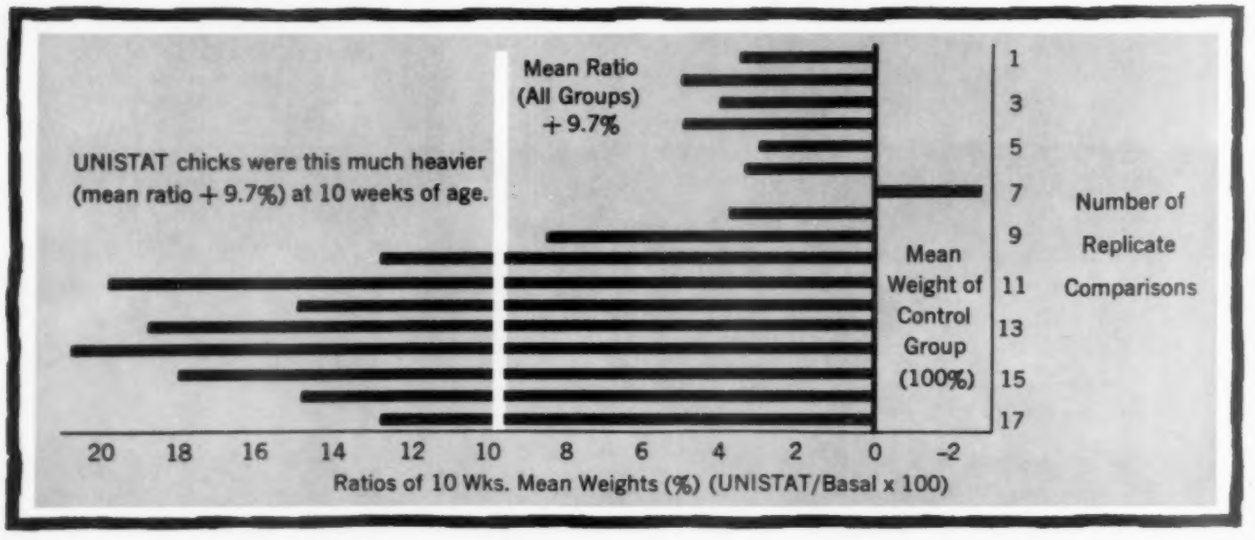
# feeds this extra protection

**FOR TOP PROFITS,**

# 1. grow faster

Fast growth is necessary to highest profits. Extensive tests, conducted by Dr. Salsbury's Laboratories and supported by field trials in commercial flocks all over the country, have shown that Unistat provides this all-important profit benefit. In one series of tests, a total of more than 6,000 broiler-type chicks were fed the basal ration, which contained an antibiotic, and their growth compared to a like number with Unistat in their ration. The bar chart shows the stimulated growth rate of the Unistat chicks—**they were 9.7% heavier at the end of 10 weeks.** Unistat was also fed for 10 weeks to replacement-type chicks confined in brooder houses. At the end of the test period, they were 11.2% heavier than the birds on the basal ration. Field trials, involving many thousands of broiler birds, have confirmed these test results. Your growers can expect a very profitable increase in growth rate from the use of feeds containing Dr. Salsbury's Unistat.

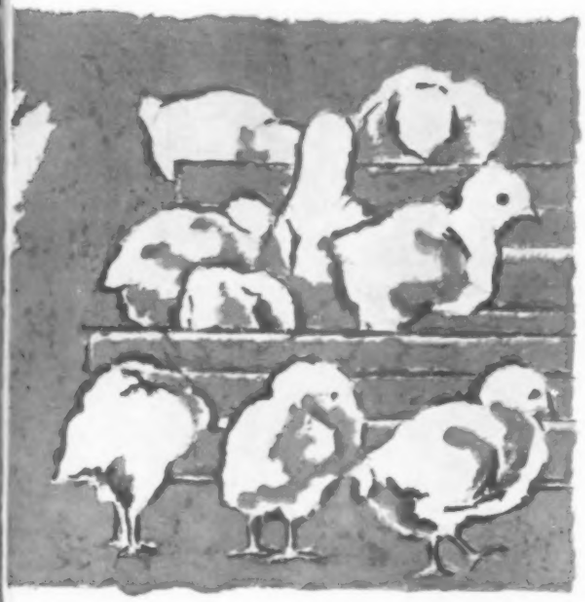



these are only **2** of the many reasons why

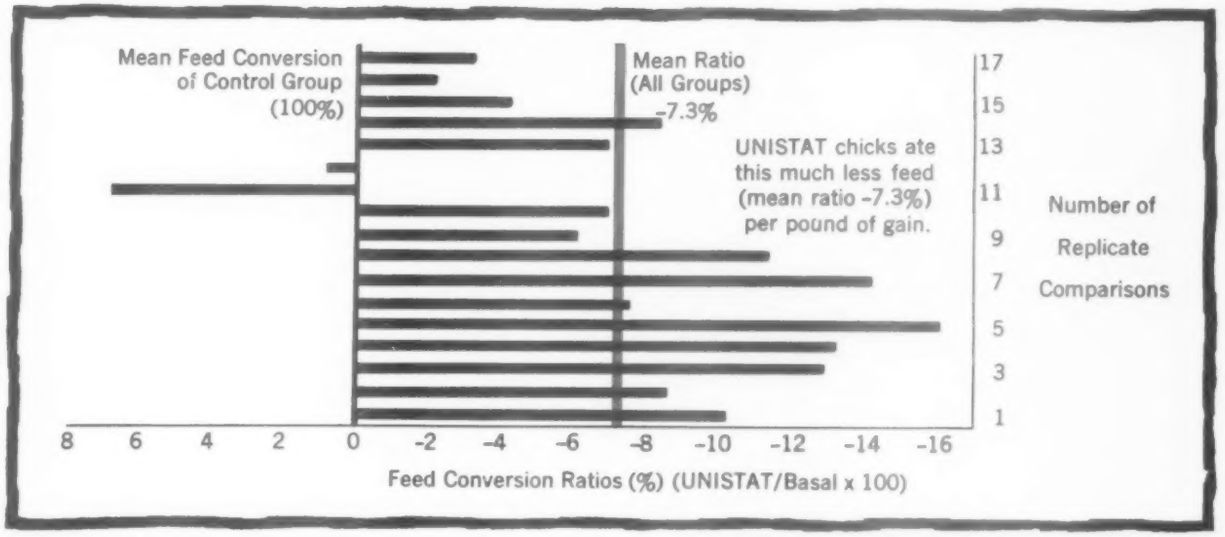
## MORE AND MORE GROWERS

## UNISTAT-FED BIRDS

# 2. need less feed

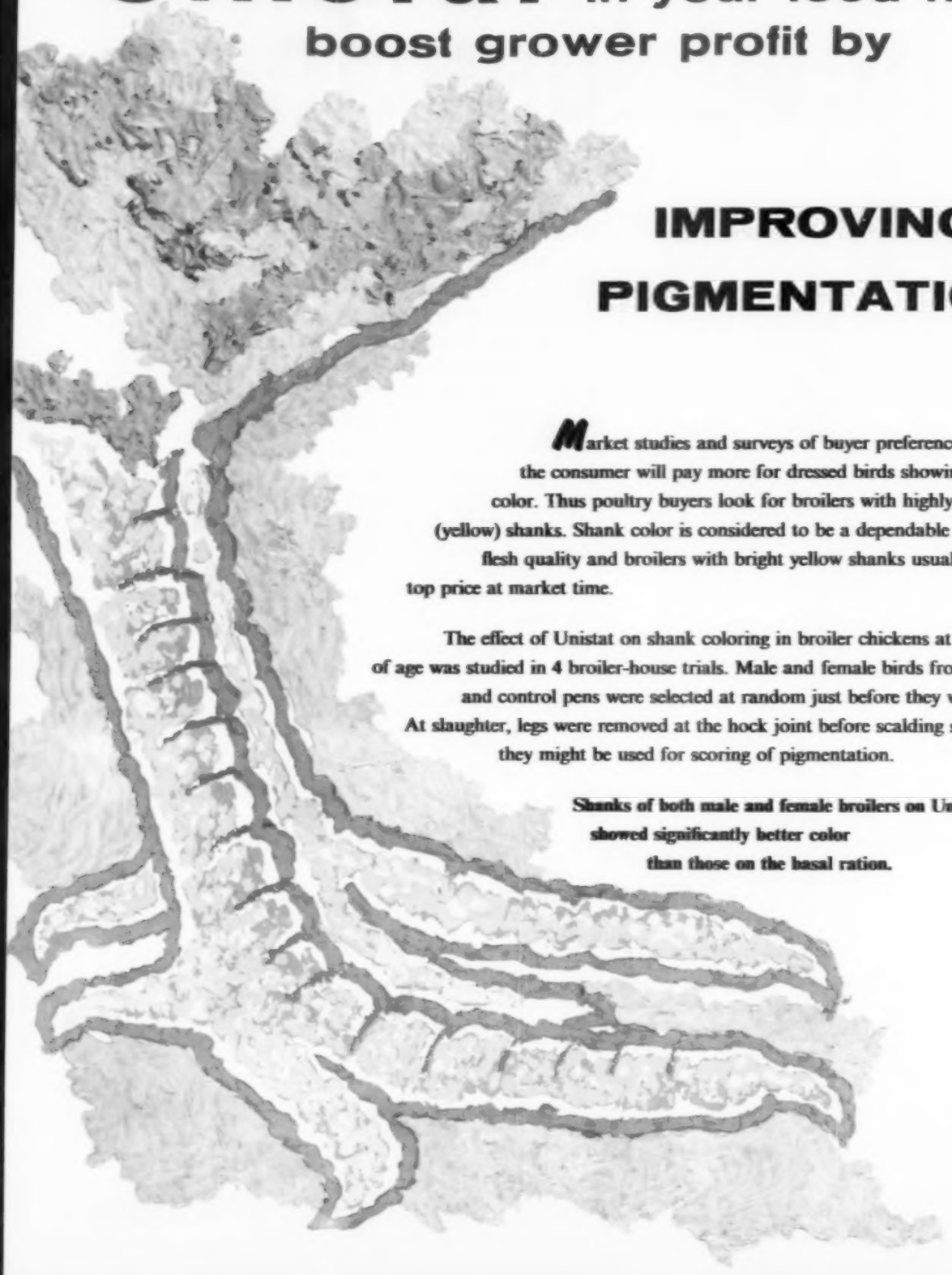


Feed efficiency is even more necessary to profits than fast growth. Birds must somehow make top gains per pound of feed. Here again, exhaustive tests probed into Unistat's side effects, long before it was available on the market. Seventeen pens of broilers were studied at Dr. Salsbury's Research Farm under semi-commercial conditions. Over 13,000 broiler birds were used, with approximately half getting Unistat-medicated feed. The others received a commercial broiler mash (containing an antibiotic) as the basal ration. All birds were sold at 10 weeks. The accompanying bar graph shows the results of this experimental work. **The Unistat broilers needed 7.3% less feed per pound of gain.** Field trials were also conducted in the commercial broiler areas. Nearly 165,000 birds were involved. These, too, showed faster gains **and** a marked reduction in feed per pound of gain. **These reduced feed requirements, added to all the other benefits of Unistat, can materially increase your growers' profits.**




## DEMAND UNISTAT IN THEIR FEEDS

# Unistat in your feed helps boost grower profit by



## IMPROVING PIGMENTATION

Market studies and surveys of buyer preference indicate that the consumer will pay more for dressed birds showing lots of color. Thus poultry buyers look for broilers with highly pigmented (yellow) shanks. Shank color is considered to be a dependable guide to flesh quality and broilers with bright yellow shanks usually bring top price at market time.

The effect of Unistat on shank coloring in broiler chickens at 10 weeks of age was studied in 4 broiler-house trials. Male and female birds from both treated and control pens were selected at random just before they were sold. At slaughter, legs were removed at the hock joint before scalding so that they might be used for scoring of pigmentation.

**Shanks of both male and female broilers on Unistat showed significantly better color than those on the basal ration.**

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  ☐ 3-Nitro® Powder ☐ Nitrosal®
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- ☐ Please have your field technical service adviser call on us
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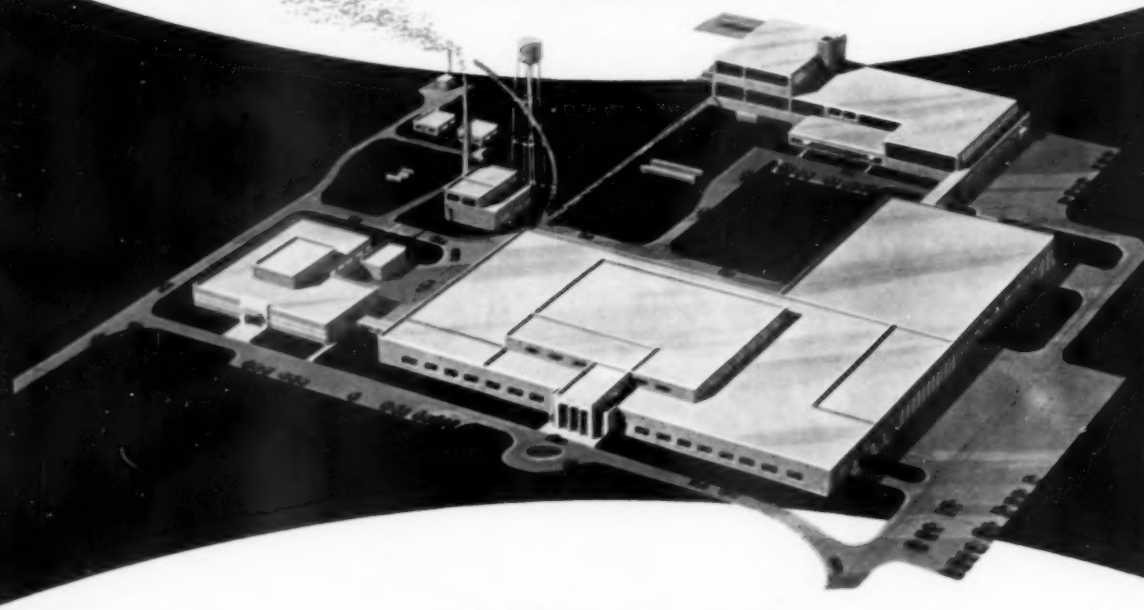
Shown below are Dr. Salsbury's production center buildings. Those parts shaded in yellow are now under construction, with completion scheduled for 1959; all others have been built in the last 12 years.



Feed Products Division

**DR. SALSBURY'S LABORATORIES**

Charles City, Iowa, U. S. A. Phone CApital 8-3241

NATIONWIDE SERVICE TO THE FEED INDUSTRY

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# *Industry Awards $7,600 for Feed Technology Study*

MANHATTAN, KANSAS — The awarding of $7,600 in feed technology scholarships at Kansas State College for the current school year has been announced by Max W. Milbourn, chairman of the college's general scholarship committee.

In all, there are 19 scholarships of $400 each supported by the feed industry. Seven of these are being awarded to students who are freshmen, or who have not previously held feed technology scholarships, while 12 are renewals of similar scholarships held by the students last year.

New scholarship recipients, and the firms providing funds for their scholarships are (the recipients are from Kansas unless otherwise specified): James Dreany Wilson, La Crosse, Wis., Ralston Purina Co.; Michael Eugene Schafer, Norton, Ralston Purina; Lawrence Ray Thomas, Indianola, Iowa, Ralston Purina; Dale Arlie Rodman, Toronto, Canada, Ralston Purina; Gary Arlyn Hohner, Smith Center, Miller Publishing Co.; Arvid Lee Hawk, Norton, Pfizer Foundation, Inc., and Elton D. Aberle, Sabetha, Archer-Daniels-Midland.

The renewals, and the firms which are sponsoring these scholarships, are: Lee Roy Young, Clifton, Jacobson Machine Works; Richard Dale Rees, Coffeyville, Superior Feed Mills; Joseph Clare Nothern, Jr., Salina, Nutrena Mills; Francis Patrick Moynagh, Hiawatha, Jones-Hettelsater Construction Co.; Robert Leroy Gardner, Louisburg, The Pillsbury Co.; Frank A. Rossi, Arkansas City, Staley Milling Co.; James Harold Booth, Baldwin, Allied Mills; Roy Morris Allen, Detroit, Kansas, Ralston Purina; Kenneth Ray McCullough, Paola, Ralston Purina; Lloyd William Rooney, McDonald, Ralston Purina, and Martyn Linn Apley, Washington, Ralston Purina.

## Missouri Reports on 1957 Feed Tonnage

JEFFERSON CITY, MO. — Less than 5% of the companies selling feed in Missouri during 1957 were responsible for almost 70% of the total volume sold, according to the Missouri Department of Agriculture.

The department's annual report for the 1957 calendar year shows that 991 companies in the state were selling feed during the year. They sold a total of 2,199,221 tons, including exempt tonnage, the report said. The total was slightly larger than in 1956.

Of the 991 firms only 44 sold more than 10,000 tons each during the year and those 44 firms accounted for 1,530,291 tons.

The report of tonnages by classes sold during the year shows that 1,142,790 tons were mixed feeds and 1,056,431 were ingredient feeds.

Chicken, broiler, egg and hen feeds combined were the largest sellers in the mixed feed category. They totaled 376,313 tons. Other leading sellers were pig and hog feeds, 217,798 tons, and dairy feeds, 216,317. Cattle feeds totaled 137,054 and turkey and other poultry feeds accounted for 90,981 tons.

Among ingredient feeds, wheat products led the list with 331,142 tons, followed by soybean products with 204,738, cottonseed products with 105,936 and molasses with 100,554.

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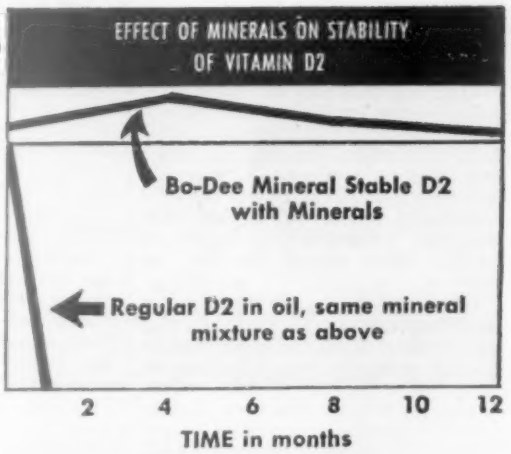


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# Service Is Essential for Feed Success

**Without proper service the best of feed often fails, customers blame the feed, and business suffers**

By Dr. Damon V. Catron
Iowa State College

*EDITOR'S NOTE: This article points out a number of ways a top-quality feed product can fail. As the author emphasizes, the only way a feed man can overcome product failures due to mismanagement, improper use of the product, etc., is to service his product. Dr. Catron, a well known swine nutritionist at Iowa State College, points out that manufacturers in many businesses have come to realize that the products they sell must be serviced if their customers are to be satisfied, and that the feed business is no exception. The material in this article was presented at the recent Iowa Conference for Feed Salesmen and Dealers at Iowa State College.*

Any product sold must be serviced in order for it to succeed. Manufacturers have come to the full realization that any commodity which they sell must be properly serviced or it may fail due to misuse—then it is difficult to make a re-sale. So, today, we can say that we spell "sell" s-e-r-v-i-c-e.

Two equally good feeds, from a nutritional standpoint, may perform quite differently in the feedlot—one may succeed because it was properly serviced after it was sold. The other may fail because it was misused, either because (1) of a lack of written feeding instructions, (2) the dealer did not tell the customer how to use it, or (3) the farmer did not follow the feeding instructions.

All feed manufacturers have access to the essential facts on how to build good feeds. The scientific nutritional literature, high-quality ingredients and the technology of feed manufacturing are available to all. Assuming that every manufacturer has the desire to build a good feed, then the main differences in feeds are how they are merchandised, and how they are serviced.

The two most common complaints heard by feed men from swine feeders are:

1. "The feed is too high, I can't afford to feed it."

2. "The feed is no good, I lost a lot of my pigs—the ones I did save eat their 'heads off' and make poor gains."

Some will say, "I haven't seen that salesman since he sold me that feed." Progressive producers want to know, "How much research do you have behind that bag of feed?" Others are only interested in, "How long can you extend me credit on the feed?"

Let's say that you, as a feed man, sold the hog producer a bag of scientifically-balanced complete swine feed. Into this bag of feed went the latest "know-how" in nutrition and feed technology. Unless properly serviced, the next call on him may bring the comment, "The feed is no good!" What caused the feed to fail?

**GENETICALLY INFERIOR BREEDING STOCK (You Can't Tell by Lookin').** Good feed can't succeed if it is going to be fed to inferior, slow-gaining, unthrifty breeding stock. In this case we are putting the raw product (scientifically-balanced feed) through poor machinery (inferior breeding stock). Although the heritability varies (shown in per cent where data is available), many characteristics such as litter size (0-24, average 10%), rate of gain (14-58, average 29%), lactating ability of sows (15-25, average 20%), feed efficiency (8-72, average 31%) and abnormalities are influenced by breeding (genetics). Carcass quality is also highly heritable (35-49, average 42%).

A U.S. Department of Agriculture survey of 783 farms showed that 31% of all runts in hog herds were caused by inferior breeding. If the cost of wasted feed could be charged against the boar, many farmers would find their "bargain boars" very expensive animals to have around.

**DISEASE (Some You Can See, Others You Can't).** Many diseases plague the swine producer, causing inefficient results from good feed. Disease can affect the performance of pigs throughout the entire life cycle. Contagious abortion and leptospirosis may affect conception and over-all reproduction in the sow herd.

Mastitis influences the sow's ability to produce milk. Transmissible gastroenteritis is no respecter of even the best of baby pig rations. Erysipelas, variant forms of hog cholera and different bacterial, fungal and viral causes of scours all plague the hog producer and interfere with maximum returns from good feed.

Except hog cholera and TGE, which can be bold enough, the rest of these diseases are "sneak thieves." They get into a hog herd and do their dirty work almost unnoticed by the hog producer—who may blame the feed for poor results.

Faulty previous nutrition—previous to the time the farmer purchased a good formula feed—may be a predisposing cause of some of the diseases which he may have at the time your scientifically-balanced feed is delivered to his feedlot. In this case, your feed has two strikes against it when it goes into the self-feeder.

**INADEQUATE HOUSING AND EQUIPMENT ("Root Hog or Die"—Yes, That's Where the Phrase Started).** Of all the factors influencing hog production, housing and equipment are probably most deficient. Pigs can live under a great range of conditions as far as housing and equipment are concerned, and we find them doing just that under farm conditions. The most glaring deficiencies seen on the farm in this area are the lack of water, lack of feeder space and the lack of proper housing.

In the past, most hog producers have provided a minimum amount of housing—just enough to "get by"—in order to farrow pigs once or twice a year, with the weather, of course. With multiple farrowing moving into the picture, in order to stabilize receipts and prices, housing must be provided which will enable the hog producer to farrow and raise pigs during any month of the year, regardless of whether it is hot or cold. Little or no research has been done on the development of adequate "pig-engineered" housing and equipment for year-around efficient hog production.

It is known that we can keep a pig warm cheaper with fuel oil than with feed. Much good feed goes to keep pigs warm during winter months when they are poorly housed.

**PARASITES — WORMS, LICE AND MANGE (You Can't Hardly See Them).** Parasites, both internal and external, are other "hidden hands in the feed bag," which make good feed appear to perform poorly. The USDA estimates the monetary loss from internal and external parasites in swine production to be about 8%, or $276,700,000 a year. The not-too-obvious worms, lice and mange all get their feed dividend. They get into the hog herd and do their dirty work while the farmer wonders what is the matter with the fine feed that is costing him from 5¢ to 12¢ lb.!

Research has shown that a program of careful sanitation produced from 1.5 to 2.5 more pigs per litter, and they weighed 20 lb. more at four months of age and reached market about seven weeks earlier.

**OVER-MEDICATION (Another Case of Hittin' the Bottle Too Hard, Too Long).** A smart hog producer once said, "You can't feed profit into a bunch of sick or starved hogs." There are exceptions to this, but usually it is true.

The dramatic responses to antibiotics, arsenicals and other so-called "wonder drugs" have certainly given the farmer a "false sense of security." He tends to let down on his management, sanitation, housing and equipment. His pigs get sick and it not only takes more feed, but a higher priced feed to bring them out of it.

We also know that over-medication with many drugs can cause metabolic disturbances resulting in exaggerated nutritional deficiencies and lowered resistance to diseases or parasites other than those for which the animal is being treated.

Your properly-balanced feed may be adequate for animals under average farm feedlot stress conditions, but it may not contain enough fortification of certain nutrients for which an exaggerated deficiency has been created by over-medication.

We have just about reached the stage where the hog producer is going to have to stop trying to substitute drugs for proper management, careful sanitation, adequate housing and equipment. So the statement "you can't feed profit into a sick or starved animal" is generally true.

**FEED IMPROPERLY USED (Wasn't Told, Didn't Read or Hear, or Just Didn't Follow Directions).** Regardless of whether it is feed or machinery, they must be properly used in order to obtain the maximum efficiency of desired results. A balanced ration may be misused by either over-feeding or under-feeding. Many times balanced supplements are not fed in proper proportion to grain, resulting in an unbalanced final ration.

Over-feeding on too much grain can cause sows to get too fat, causing poor conception at breeding time, the development of small litters during gestation and difficulty at farrowing.

Under-feeding also has its impact on the breeding herd, with sows too thin at farrowing time, and lacking the body reserves for maximum milk production. Under-feeding a good lactation ration containing thyroactive compounds at farrowing and during lactation is also a mistake, resulting in poor lactation performance.

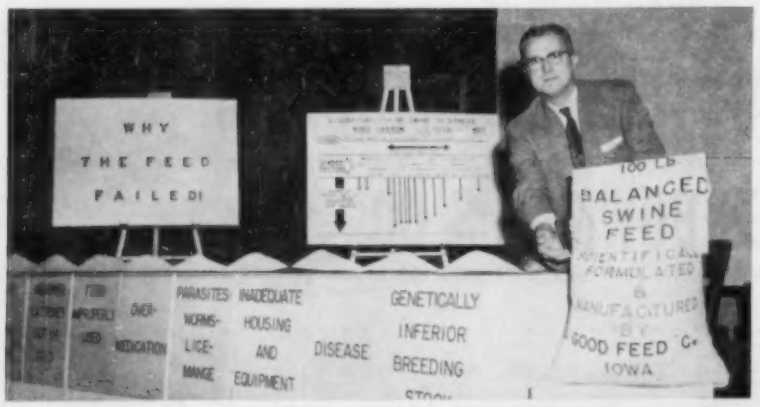
"Skimping" on supplement is probably one of the most common "feeding faults" by most hog producers. The slow, inefficient gains resulting from this "miserly" feeding practice will make the best supplement look poor.

Recognition of this widespread malpractice has caused us to develop a "least-time" method of feeding growing-finishing hogs on complete, performance and "cost-controlled" rations. It has also caused us to recommend the use of complete rations

## Why the Feed Failed

**Why does high quality feed sometimes fail? In the accompanying article Dr. Catron discusses several reasons, if service is lacking. In brief they are:**

- **Genetically inferior breeding stock.**
- **Disease; many diseases cause inefficient results.**
- **Inadequate housing and equipment.**
- **Parasites—worms, lice and mange.**
- **Over-medication which may cause farmers to let down on management, and also may cause exaggerated nutritional deficiencies.**
- **Feed improperly used—overfeeding and underfeeding, and failure to feed it in proper proportion to grain.**
- **Weather extremes.**
- **Lack of care of stock.**
- **Poor storage of feed at the farm; fresh feeds out-perform stale feeds.**




**FEED SERVICE—Dr. Damon V. Catron illustrated visually the theme of his address at the recent Iowa Conference for Feed Salesmen and Dealers (formerly the Iowa Nutrition Conference) at Iowa State College. The Iowa State swine nutritionist pointed out a number of ways a good feed product can show up poorly unless the feed man provides proper service. In this picture, he is showing how feed is wasted because of things like disease, improper use of the feed, inadequate housing, etc.**

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**INTERESTED SPECTATOR — Secretary of Agriculture Ezra Taft Benson paused to examine a model of the hog marketing unit designed by Frank Clark, a Wirthmore Feeds, Inc., livestock serviceman. The exhibit was part of Wirthmore's display at the Ohio Pork Producers Assn. meeting in Xenia, Ohio.**

for the nutritionally-critical periods of swine production—farrowing, lactation, pre-starter, starter and grower periods.

It is very important that the swine producer be given clear and complete instructions on how the feed is to be fed. Otherwise, it will fail! This is where service must follow selling if the feed is to succeed.

**WEATHER — EXTREME HEAT OR COLD (Both Are Mighty Uncomfortable—Even to a Pig).** A balanced bag of feed can really be made to look sad by extreme hot weather when the animal loses his appetite, or by extreme cold weather when the animal has to burn up part of the feed to keep warm.

In the past, swine producers have adjusted their hog production practices to the seasons of the year. Here again, the advent of multiple farrowing is changing this. Progressive hog producers are finding it necessary to provide adequate housing and equipment to enable them to farrow, feed and market pigs throughout the year, regardless of whether it is hot or cold. This causes new problems to be recognized. This also makes the feed man realize that his feed may fail because of extremes in weather.

Heat can affect feed performance as severely as cold. Heat results in poor sow conception, consequently a higher feed charge per pig farrowed. Heat reduces appetite, resulting in lowered daily feed intake accompanied by slower gains and poorer feed efficiency. Heat has a tremendous effect on the lactating ability of sows. The best balanced sow ration really looks sad when the temperature goes above 85 degrees F.

Extreme cold takes its toll from farrowing time until market time in chilled pigs, poor feed efficiency and slow gains.

Baby pigs have a very poor "body thermostat," therefore they must be kept warm at farrowing time and during the first two weeks after farrowing. Present observation on early weaned baby pigs indicates that many baby pigs are over-heated after two weeks of age.

The optimum temperature for a growing-finishing hog is about 55 to 60 degrees F. If it requires 4 lb. of feed per pound of gain for heavier hogs in this temperature range, then it requires 13 lb. of feed per pound of gain when the temperature goes to 85 degrees F. or above.

Swine specialists and producers are just beginning to realize the great impact on efficiency which may be affected by both heat and cold. This will no doubt have a great effect on the development of the swine industry in climates with higher temperatures of longer duration than found in the regular Corn-Hog Belt.

**LACK OF CARE (Troubles?—Well, Mr. Hog Producer, Take a Good Look in the Mirror!).** It takes about 750 to 800 lb. of total ration to feed a sow to produce a litter of pigs up to farrowing time. That means nearly one half ton of feed has been wasted by the sow that loses her pigs just before "due date."

Has the feed failed? Maybe so, but many causes of lost litters have nothing to do with the feed. The sow may have been injured by running with other livestock. A pregnant sow should not be asked to compete for feed and sleeping quarters with cattle or the entire hog herd. Careless injuries can cause a sow to throw her pigs no matter how well she has been fed. Narrow doors, high sills and steep steps are all "hidden hands in the feed bag," stealing expensive feed.

The average Corn Belt farmer loses 25% of his pigs between farrowing and weaning. The "top" Iowa swine producer loses about one out of every eight pigs farrowed. Over one fifth of all pigs farrowed die within the first two days. Every pig lost at farrowing time represents the loss of about 140 lb. of feed. You can figure it out yourself, because it takes about 750 lb. of feed for a sow during gestation. The use of farrowing stalls will reduce the main cause of pig losses following farrowing—namely, overlaying.

The feed man cannot do much about the pigs that are dead at birth, or the pigs that are chilled, eaten by the sows, smothered or overlaid. Most of these losses must be chalked up to poor care and management of the sow and litter at farrowing time.

Many pigs are stunted because the sow is fed too little and too late after farrowing. The pigs did not get enough colostrum milk and its highly essential protective antibodies.

**Pig Anemia**

Nutritional science has not been able to develop a pig anemia control


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method via feeding the sow. As yet each pig has to be treated individually for nutritional anemia. A baby pig with anemia is more susceptible to disease. This is a management problem.

The feed (if it is a prestarter or starter ration) may also fail because the young pigs themselves were "rationed"—not given enough feed early. Blame the feed if you want to, but maybe the blame should be placed on the fellow who left the feed in the feed house!

A lack of bedding, or cold, wet bedding puts a tremendous stress on baby pigs. Cold concrete floors should either be radiant-floor heated or adequately bedded (serving as insulation).

Science has found only one way to get a hog to market fast, and that is to full-feed him the right kind of a ration. For fastest gains, we need to apply "least-time" ration principles. For most economical gains, use "least-cost" ration. Both require completely ground mixed rations. Skimping on supplement when it is to be fed with grain seldom provides either a "least-cost" or "least-time" ration. This usually happens when the supplement is hand-fed and the grain self-fed.

Although the self-feeding of supplement and grain free-choice offers the simplest and easiest way to feed growing-finishing hogs, it does not assure that the pig will properly balance his own ration for either best performance or most economical gains. So if this scientifically formulated and carefully manufactured bag of feed should be a supplement, this is another way it can fail.

Leaky, poorly adjusted self-feeders can make any good bag of feed look inefficient.

**POOR STORAGE OF FEED AT FARM (Feed Can "Fade," Too!).** Fresh feeds always out-perform stale feeds. Stale feeds give poorer performance not only because of reduced palatability, but because of losses in certain nutrients during storage. Unless feed is stored right, there can be a big loss in vitamins. The poorest place to store feed is under a tin roof in the summertime. It gets hot there! Vitamins disappear!

If a hog producer has a few bags of pig starter left over from a previous farrowing (say 3 to 6 months old), and he decides to feed it, he will probably end up with about 13% less gains and 5% poorer feed efficiency in his baby pigs than if he had used fresh feeds. This is based on recent research.

There are physical storage losses, too. A leaky roof can waste a lot of feed. Rats and mice, if they eat at all, will eat an expensive feed as fast as they will an inexpensive one. These feed losses get "chalked up" against the pigs—again the feed looks failing!

The moral of this story is:

When you sell the farmer a bag of scientifically formulated and manufactured feed, he will find a balance of essential proteins, vitamins, minerals and other valuable feed additives. But when he looks into that bag of feed he cannot expect to find a well-bred sow herd, a top performing boar from a good testing station, or sows that will conceive 100% the year around.

Neither will he find a guarantee against his sows being injured by other livestock during the pregnancy period, nor the proof that she will not eat too much corn if he turns her loose in the cornfield after it has been picked. He will not find a mechanical hired man to take care of his sow and her litter at farrowing time, nor a "built-in" veterinarian to control his pigs' diseases or parasites.

Neither will he find the "business brain" which will tell him how to organize his production and marketing program. As yet, you cannot put an agricultural engineer in each scientifically balanced bag of feed to provide the proper housing and equipment which he needs to maximize efficiency in feed and labor utilization, and maintain optimum environmental conditions for maximum production.

Therefore, you may have sold the farmer the best bag of feed that was possible to formulate and manufacture, but these "hidden" feed losses may make him say, "The feed wasn't any good!" But if this hog producer would just take a good look in the mirror, he would probably find 90% of the reasons why the feed failed.

Remember — about every seventh bag of feed is wasted because three out of every 10 pigs born never reach market.

It is because of these "hidden hands in the feed bag" that I appeal to you to follow up your sale with SERVICE to make sure that your feed does not fail!

## HOG CHOLERA EPIDEMIC?

**LINCOLN, NEB. — The possibility of a large scale hog cholera epidemic in Nebraska was reported by Dr. E. Crosby Howe, University of Nebraska extension veterinarian.**

**Dr. Howe said he believed the epidemic was possible because of the low swine prices a few years ago when many farmers neglected to vaccinate their herds.**

**He said that following the widespread acceptance and use of killed or attenuated hog cholera vaccines, there has been a decrease in the number of record hog cholera cases. This has built up a feeling of complacency toward the disease, and there are now a large number of swine that are susceptible to the disease.**


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In the last quarter of the year alone, 87 big advertisements (full page or larger) will be building demand for KAFF-A and PEX products. This is bigger feed advertising than either Kraft or Consolidated Products (former makers of KAFF-A and PEX) has ever done before. And it's only a beginning. Real selling advertising will continue next year. Now is the time to stock these popular products. They will increase your volume and your *net*. For further information, contact your nearest Kraft Branch, or write:

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KRAFT FOODS
DIV. OF NATIONAL DAIRY PRODUCTS CORP.
CHICAGO, ILLINOIS

SEND FOR THE NEW
ELTON CONVEYOR CATALOG
*It will save money for you!*
CHANTLAND MFG. CO.
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- HIGH QUALITY
- 60% PROTEIN
- for hog feeds

Call collect anytime for quotations — MA 6-2803

MARCO CHEMICAL COMPANY
P. O. BOX 8 • FORT WORTH 1, TEXAS

# SUPERIOR MANGANESE ADDITIVE

*Manganese Carbonate*

(Chemically Precipitated)

Manganese carbonate has proved a superior additive for feedstuffs. Stable—non-hygroscopic—completely available to the animal. Free-flowing for easy blending. High purity—low cost. Available for immediate shipment.

**MANGANESE CHEMICALS CORPORATION**

RAND TOWER *Call FEderal 2-8371* MINNEAPOLIS 2, MINNESOTA

**LA BUDDE**

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MALT SPROUTS
BREWERS GRAINS
DISTILLERS GRAINS
BEET PULP
AND 44 OTHER FEEDS

★ Buy and Sell Through WANT ADS ★


# *Poultryman Outlines Changes Needed In New England Turkey Industry*

AMHERST, MASS.—The swing toward mass production units in agricultural commodities and more efficient marketing procedures will necessitate several changes in the turkey industry of New England, according to a report in Featheredfax, publication of the department of poultry husbandry at the University of Massachusetts.

Dr. J. Robert Smyth, Jr., member of the poultry department staff and author of the report, pointed out that for Massachusetts turkey growers to remain competitive in the face of developing obstacles, the following changes will need to be made:

**"1. A shift in marketing practices from retailing to wholesaling.** The big stumbling block here at the present is that there is no wholesale market. What is needed is a dressing plant and merchandising setup. This organization could be successful by using a brand name for a high quality package, and by a progressive sales program and promotion of turkey in parts, halves, or in some processed form. Growers would concentrate only on raising a good bird and selling it live from their own farms.

**"2. A change toward larger units and a lower profit per bird raised.** With the inevitable increasing squeeze on profits per bird, it will be necessary to raise more birds per farm unit. However, with the problems of dressing and direct selling removed on many farms, this could be accomplished with little or no extra cost.

**"3. A shorter growing period from poult to marketing.** It will be necessary to cut down the length of the growing period to 15-16 weeks. This means a bird nearing a finished adult size and with good finish at this age; what are now broiler or fryer sizes would undoubtedly be marketed at an earlier age than at the present time. A shorter growing period will help reduce the advantage of the lower feed cost of the grain producing areas. An efficient all-pellet feeding program to this age would even up much of the difference due to the elimination of a good part of the heavy grain feeding period. To obtain this 15-16-week-old bird we will need improved rations and a faster growing, earlier finishing bird. Nutritionists are constantly working in this direction, and it is time that more breeders began to think in terms of this type of bird. In the not-too-distant future they will be a reality.

**"4. Better management.** This means even better management for the area, which is already outstanding in this respect. In the future there will be no place for feed wastage, careless disease control, holding birds after they are ready for market, etc. We will need to stay aware of the latest developments and put them into practice.

**"5. A cheaper poult.** Breeding operations will also have to increase their efficiency and by so doing, lower their poult prices. This will be inevitable in the future."

Dr. Smyth said that at the present time growers in Massachusetts and most of those in New England are depending on either direct retailing to the consumer, or selling at a premium price to special retail stores. The birds grown in excess of those

(Turn to page 45)

# Cash in

on big, steady demand for

PILOT BRAND OYSTER SHELL

You can always count on fast turnovers and good profits when you stock and display PILOT BRAND Oyster Shell. That's because poultrymen everywhere have learned that hens produce more eggs with stronger shells when PILOT BRAND Oyster Shell is in the hoppers.

This year 'round, nation-wide demand—constantly stimulated by advertising in leading farm and poultry journals and on 70 radio stations—makes your selling job easier. It pays to push PILOT BRAND—the largest selling eggshell material in the world.

*Order from your distributor or write to us*

**Oyster Shell Products Company**
Mobile, Alabama

PILOT BRAND OYSTER SHELL FOR POULTRY

**Fleischmann's F·I·D·Y**
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

**HONEGGER DEALERS PROFIT from the BIG FRANCHISE**

BIG 4

Franchises available in some areas
WRITE, WIRE or PHONE
Honeggers' & Co., Inc.
Fairbury, Illinois

FEED
CHIX
FARM BUILDINGS
EQUIPMENT

Lilly **REPORT TO THE FEED INDUSTRY**

## INTERVIEW WITH CHAMPION BARROW RAISER J. R. BEATTY, AVON, ILLINOIS

# "Hygromix® does best job of swine worm control"

*by Eugene S. Hahnel*

Bob Beatty evidently knows how to raise hogs with the best of them. His Grand Champion Barrow at the 1958 Chicago Spring Barrow Show is pretty good qualification.

But Mr. Beatty has to fight the worm problem, just like everyone else. For the past year Bob has been using a new weapon . . . Hygromix. A careful man, he checked the job Hygromix was doing several times with a purge-type wormer. He checked his fastest and his slowest gainers, barrows fitted for show, and his stock for sale. Result: no worms.

Beatty doesn't mince words: "My own experience shows that Hygromix in feed does the best job of keeping hogs free of worms . . . better than any product put out yet. Although my top pigs make about the same gains, we seem to have a lot fewer 'tail-enders.' I like the idea of being able to protect pigs from birth on, instead of only periodically."

Well-known and respected, Bob Beatty is president of the Western Illinois Swine Testing Association and a director of the Illinois Poland China Breeders Association.

Mr. Beatty's champion barrow was out of "Midnight Revue," a certified meat-type and production registry sire. This barrow weighed 205 pounds and dressed out 75.1%.

Makers of **Stilbosol®** (diethylstilbestrol premix, Lilly)
Procaine-Penicillin-G • Vitamin B-12

**HYGROMIX®**
(*S. hygroscopicus* fermentation products, Lilly)

Lilly

ELI LILLY AND COMPANY, AGRICULTURAL AND INDUSTRIAL PRODUCTS DIVISION, INDIANAPOLIS 6, INDIANA

**THE HIPPO**

**Because he lives a life serene**
**Never are his haunches lean.**
**The only problem for the Hippo**
**Is a scale that he can't tip-o.**

## AN ENORMOUS RESULT FROM A RELAXED LIFE

How to relax, conserve energy and amass weight is a hippopotamus' secret unknown to the chicken. ■ LIPAMONE, the only poultry feed additive producing hormone-like results, has a built-in calming effect on broiler and roaster flocks. ■ Growers report birds on LIPAMONE are quieter, less given to cannibalism and pile-ups. Some growers have even stopped debeaking. ■ LIPAMONE's in-the-feed action offers finer finish, better bloom, best fat distribution, excellent weights and feed conversion, and greater carcass uniformity. Names and facts supplied upon request.

economical.....no labor costs
effective..... no misses
efficient..... no off-feed reactions
safe..... no shock to trigger CRD and other diseases

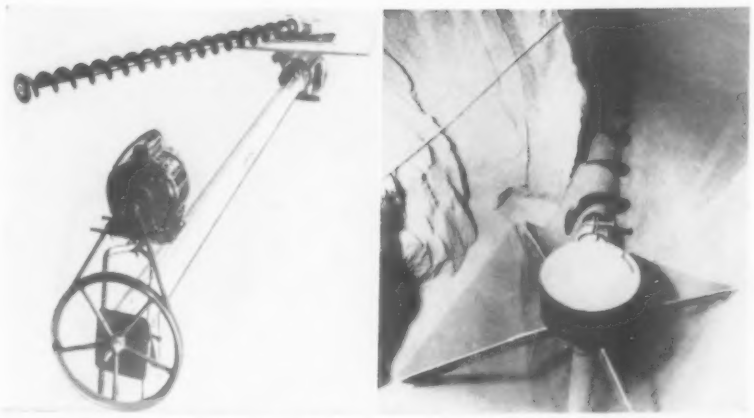
# LIPAMONE®

Sold through leading feed outlets in their broiler and roaster finishing feeds

FINISH IN THE MONEY

White's Agricultural Division WHITE LABORATORIES, INC. Kenilworth, N. J.

LIPONETTE the 24-carat line



**NEW BIN UNLOADER—A flat-bottom bin unloader that will break up caked feeds or grains and deliver them to a discharge point has been designed by U.S. Department of Agriculture engineers and the Illinois Agricultural Experiment Station at Urbana, Ill. Meant for use mainly in round, corrugated steel bins 14 ft. in diameter, it is shown as it would appear before installation in a storage bin. The pivoted sweep auger at the top revolves on its own shaft and carries feed to the square hopper located in the center of the bin floor. This auger rotates around the bin floor, counter clockwise, to press against and remove caked materials. Below is an encased auger which carries the stored materials away from the hopper and to a discharge point. In the second picture the unloader is shown in action. Not shown in the photo is the encased auger which carries the feed away. In tests, it has moved 22,000 lb. of shelled corn or 18,000 lb. of soybean oil meal per hour. The capacity can be increased by using larger motors or augers. (USDA photos)**

marketed in this way are usually sold wholesale at little or no profit. He pointed out that, in contrast, most of the rest of the country's turkeys are grown specifically for wholesale marketing.

"It is obvious that a profit is being realized on these birds in other areas, since the numbers produced remain high from year-to-year. The lush post-war profits have long since disappeared and it is very unlikely that they will ever return. Yet, at the present, we are able to make money retailing, while the rest of the country's growers are doing well selling their birds live weight," he said.

Speaking of the system of farm retailing of turkeys, Dr. Smyth said already many growers are complaining of reduced sales, and that since turkey consumption is holding up well and possibly increasing, former farm customers are obviously buying turkey along with their groceries at their regular shopping place.

He said modern food centers are providing rough competition with their "rock-bottom" prices for turkey, and by offering high quality carcasses in increasing numbers. "We could also be faced at some future date with even more rigid carcass inspection laws than are now proposed," he declared.

The poultry specialist said that large turkey producers in other areas are successful at the present time because of established marketing setups such as in the South Atlantic and Far Western areas, and because of being located in areas of surplus grain. He also mentioned that growers in some areas are willing to accept a relatively low margin of profit per bird, and that others raise turkeys as a sideline only, permitting them to survive bad years better than some "turkey-only" operations, Dr. Smyth said.

He concluded his remarks by saying that, in spite of increasing competition, Massachusetts can still take advantage of its "good management potential and know-how, nearness to population centers, and good growing climate" to maintain a healthy turkey-producing industry.

### GRAIN FIRM CHARTERED

DENVER—Otis Grain Corp., Denver, has been granted a charter. Incorporators are Edward L. Hallgman, Viola H. Mourer and Helen Johnson.


**SUNSET FEED & GRAIN CO., INC.**

PHONE CLEV. 2938 — 805 Dun Building, Buffalo 2, N.Y. — TWX BU 71

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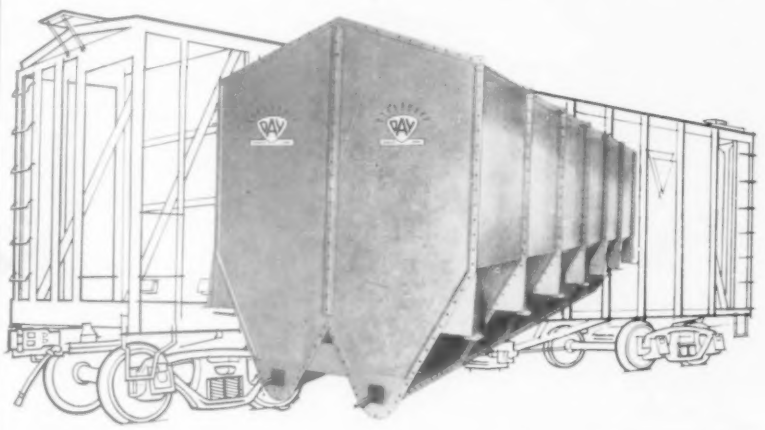
AND
DISTRIBUTORS OF

KELLOGG HOMINY FEED — HUBINGER GLUTEN FEED
DYNAFOS DICALCIUM PHOSPHATE AND MULTIFOS
SODIUM BENTONITE
PACIFIC MOLASSES — PILOT OYSTER SHELLS
DU PONT'S "TWO-SIXTY-TWO" FEED COMPOUND
STONEMO GRANITE GRIT — CALF MANNA
NOPCO FEED SUPPLEMENTS
WHEAT GERM — WHEAT GERM OIL
AGRI-TECH ALFALFA PRODUCTS

*INQUIRIES APPRECIATED*

**DAY**

BULK STORAGE NEWS

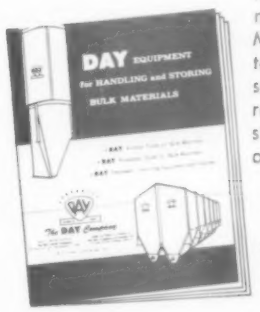


**A CARLOAD OF STORAGE IN ONE 'PACKAGE'**

**SAVE!** Store Feed
in bulk with **DAY** Tanks

Here's a "package" that's engineered and built for heavy duty service. Compared to bags or other containers, DAY Bulk Tanks store more materials, in less space, faster, better and cheaper. By eliminating bag and labor costs they save up to 35¢ on every 100 lbs. of bulk material handled.

DAY tanks are large enough to actually store a carload or more of material in a single tank. They may be pneumatically or mechanically loaded and emptied. Made in vertical and horizontal styles, DAY tanks are built and shipped in easily erected sections. They have been proven in a wide range of applications. They are sturdily constructed of galvanized, black or stainless steels or aluminum.




**Write toDAY for Bulletin 574. This 12-page booklet gives specifications plus money saving facts about sanitary, weatherproof DAY tanks.**

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*Representatives in Principal Cities*

**EQUIPMENT ONLY OR A COMPLETE SYSTEM**

***Larger Profits for Dealers And Growers With Hard, Sparkling***

SUPREME **RI-STONE** REG. U.S. PAT. OFF.
SHARP-INSOLUBLE

**GRANITE GRIT**

**The demand for Sparkling Ri-Stone Granite Grit is growing by leaps and bounds. Sales are more than double that of last year. Poultry Raisers find Ri-Stone's harder, sharper grinding edges enable them to get faster growth and more and larger eggs at lower costs. Every month more raisers are learning about Ri-Stone through its regular advertising in poultry publications reaching approximately a million operators per month.**

Yes, Ri-Stone means added profits to both feed dealers and poultry raisers. Your inquiry is invited. Write for copy of Poultry Grit Facts.

Get Ri-Stone in the economical 80 lb. bags. A size for all ages. Fine, Medium, Coarse and Turkey sizes.

Fine Aggregate Division
**RION CRUSH STONE CORP., Rion, S. C.**
QUARRIERS OF GRANITE FOR OVER 70 YEARS.

*How you can save on vitamin A costs by buying according to...*

# stability of vitamin A sources

**Different sources of vitamin A—fish liver oils, other vitamin A oils, products where the vitamin is absorbed on cereal carriers or stabilized with wax, animal fat or vegetable gum—vary greatly in their stability characteristics in different types of feeds and under different storage and use conditions.**

---

**Here are facts that show Pfizer Vitamin A Palmitate in Gelatin's superior stability in feeds of all types under a wide range of conditions helps make it the lowest cost source of vitamin A activity when *true cost* is considered—the cost of the vitamin A you *put into your feeds.***

---

The most drastic test of vitamin A stability is storage with minerals.

A one-year test was undertaken by a well-known Midwestern feed manufacturer in Feb., 1956, to determine stability of four leading vitamin A products in a swine mineral supplement.

The mineral supplement had a claimed potency of 50,000 U.S.P. units vitamin A per pound and contained the minerals calcium, phosphorus, salt, iodine, iron, manganese, copper, cobalt, zinc, and magnesium.

To obtain unbiased reports, the company relied on assays of three supplier laboratories, an independent lab and the manufacturer's own lab. The mineral supplement was stored in 50-lb. multiwall paper bags under normal storage conditions. Simultaneous assays were made by the five labs in Feb., July, and Nov., 1956, and at the close of the test in Feb., 1957.

Rankings of the vitamin products were averaged in final tabulations to determine the stability rank of each vitamin A tested. These rankings, based upon average 12-month retention were:

| Rank | Product | All lab. average |
|---|---|---|
| 1 | Pfizer Vitamin A Palmitate in Gelatin | 94% |
| 2 | Product B | 83% |
| 3 | Product C | 75% |
| 4 | Product D | 67% |

### Pelleting another critical problem

In commercial pelleting heat, pressure, moisture, trace minerals, and exposure to air combine to destroy vitamin A. Potency losses of 10% to 30% are not uncommon. Research indicates factors such as degree of steaming, exit temperature of pellets, nature of ration, pellet size, amount of fines formed which require recycling and type of mineral salts also influence stability. Add the loss that often occurs when pellets are stored and you see the magnitude of the stability problem in pelleted feeds.

Pfizer Vitamin A Palmitate in Gelatin has retained over 95% of initial potency after steam pelleting and thirty days storage in pellets with a high-moisture content.

Assays have shown no loss of potency due to cubing process in making cubes.

### Excellent stability in high-moisture feeds

Pfizer Vitamin A Palmitate in Gelatin has retained 95% of initial potency after six weeks in mixed feed (12.8% moisture) under accelerated conditions. It shows high stability in extremes of temperature and humidity where many competitive products lose 30% to 40% in two weeks under the same conditions. Fish liver oils lose 60% to 70%.

### Stability in storage

Pfizer Vitamin A Palmitate in Gelatin has shown no appreciable loss in three months of shelf storage. Many competitive products lose 5%-12% initial potency.

### Stability *plus* availability needed for best results

Some feeds are marketed under conditions where stability of the vitamin A is not a critical factor. For example, bulk shipments in truck and carload lots to a feedlot or farm where the feed is used almost immediately.

However, biological availability is still important. If the animal or bird can't utilize all of the vitamin A in the feed, various vitamin A deficiency disorders could cause trouble.

Ask your Pfizer representative for facts that show Pfizer Vitamin A Palmitate in Gelatin has greater biological availability than fish liver oils, other vitamin A oils, products where the vitamin is absorbed on cereal carriers or stabilized with wax, animal fat or vegetable gum.

Pfizer Vitamin A Palmitate in Gelatin's greater biological availability—its superior stability in feeds of all types—makes it the lowest cost source of vitamin A activity when *true cost* is considered . . . the cost of vitamin A *put into feeds*, the cost of vitamin A *utilized* by the bird or animal.

Ask your Pfizer representative to prove it.

Chas. Pfizer & Co., Inc.
*Science for the world's well-being*
Suppliers of antibiotics, vitamins and other growth-promoting feed ingredients

Pfizer Vitamin A

630 Flushing Ave., Brooklyn 6 • 6460 W. Cortland St., Chicago 35 • 1500 16th St., San Francisco 3

State feed inspector takes sample of feed for later analysis to check if feed meets its labeling on vitamin A content.

TABLE VI. FIVE-YEAR STABILITY SUMMARY OF VITAMIN PRODUCTS

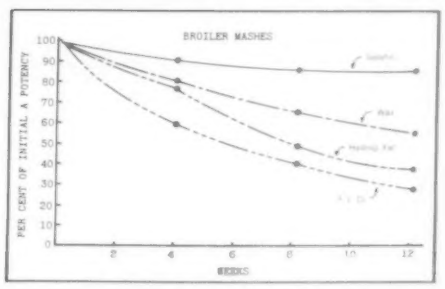
Numbers represent per cent potency retention after 12 weeks storage, unless otherwise noted. Figures in parenthesis are the number of lots averaged (8 determinations per sample).

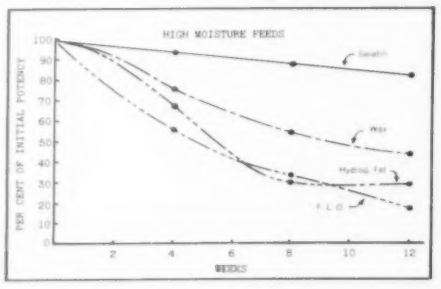
| TYPE PRODUCT | STABILITY – PER CENT RETENTION | | | |
|---|---|---|---|---|
| | High-Moisture Feed 70% R.H., 88°F. | Mineral Mix 115°F. | Broiler Mash 70°F. | Pelleted Broil. Mash 70°F. |
| Gel. Stab. | 85% (45) Range 73-97% | 72% (20) 51-93% | 85% (19) 77-92% | 68% (18) 52-88% |
| Fish Liver Oil | 17% (13) Range 12-23% | 0%† (13) 0-0% | 26% (8) 11-45% | 27% (8) 15-36% |
| Wax Stab. | 62%* (17) Range 22-87% | 25%* (20) 0-69% | 53% (4) 30-70% | 33% (4) 29-39% |
| Fat Stab. | 27% (6) Range 19-56% | 10%ρ (6) 0-14% | 37% (2) 33-38% | 35% (2) 33-37% |

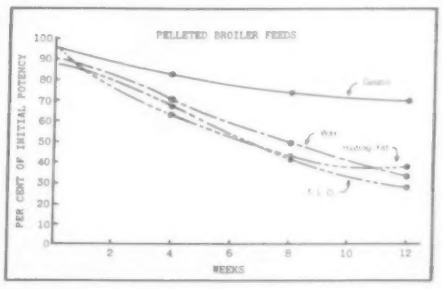
† 2-week data. ρ 6-week data. * 8-week data.

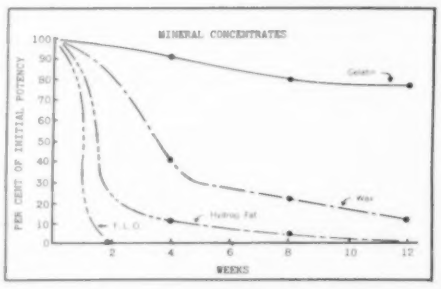
## Only Pfizer's Vitamin A Palmitate in Gelatin gives you all these important advantages:

- **Outstanding stability in pelleting and pelleted feeds, mineral mixes, concentrates, high-moisture feeds.**
- **Greater bio-availability, unit for unit, than fish liver oils, other vitamin A oils, products where the vitamin is absorbed on cereal carriers or stabilized with wax, animal fat or vegetable gum.**
- **Controlled-size, dry, free-flowing beadlets assure uniform distribution in feeds. No oil to heat, no spraying, no clogging.**
- **99 plus percent pure vitamin A; no impurities to accelerate "A" loss; assay by USP and colorimetric methods gives essentially same potency.**




# Palmitate in Gelatin

7600 Ambassador Row, Dallas 7 • 5251 Peachtree Industrial Blvd., Chamblee, Ga. • In Canada: 5330 Royalmount Rd., Montreal 9, P.Q.

*Yes!*

*He's looking for some of your dog food made with our complete dog food cereals*

★ TOASTED CORN FLAKES ★ KIBBLED CORN
★ TOASTED WHEAT FLAKES ★ KIBBLED WHEAT
★ CORN GRANULES ★ KIBBLED PREMIXES

(Straight or Mixed Shipments)

Carloads — Truckloads — LCL — LTL

**LAUHOFF GRAIN COMPANY**

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**BLACKSTRAP MOLASSES**
**ANIMAL FEED SUGAR**

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Processors of DRIED FISH SOLUBLE PRODUCTS
A "MUST" IN EVERY SWINE OR POULTRY RATION
*Call or write for complete information and price*
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# Illinois Nutrition Conference Planned For Veterinarians

CHICAGO — Some 200 veterinarians will gather in the Pabst Brewing Co. Auditorium, Peoria Heights, Ill., Nov. 19 at the Nutrition Conference for Veterinarians, jointly sponsored by the Illinois Feed Assn. and the Illinois State Veterinary Medical Assn. Registration for the conference will begin at 9 a.m.

Dr. O. Burr Ross, head of the department of animal science, University of Illinois, will speak on "Beef Cattle Nutrition"; Dr. Roy Nichols, department of veterinary science, University of Wisconsin, will discuss "Bloat Control in Dairy Cattle," and Dr. D. E. Becker, department of animal science, University of Illinois, will cover "Swine Nutrition Research."

Dr. Victor Heiman, director of the animal nutrition department, Corn Products Refining Co., Waverly, N.Y., will discuss "Nutrition and Feeding of Dogs."

In a panel discussion on the general subject of "Medicated Feed Additives," three persons will take up such phases of the subject as: "In Feed Manufacturing," A. T. Myren, Faultless Milling Co., Springfield; "To Combat Stresses," Ray Klussendorf, Commercial Solvents Co., Terre Haute, Ind., and "In Veterinary Practice," Dr. James Allen, McMillen Feed Mills, Decatur, Ind.

C. W. Sievert, C. W. Sievert & Associates, Chicago, will act as master of ceremonies at the noon luncheon.

Veterinarians from eight or nine adjoining states are expected to attend.

Planning committee members representing the feed group include: Alvin W. Lovekamp, U & L Grain Co., New Berlin, Ill.; Robert Fischer, The Beardstown (Ill.) Mills; Dexter Obenhaus, Community Feed Mill, Princeton, Ill.; Carl Rylander, Howard Kauffman Feed Mill, Waterman, Ill., and Mr. Sievert.

Dr. Morris Erdheim, Dawe's Laboratories, Inc., Chicago, chairman of the committee, and Dr. Clarence B. Hostetler, executive director of the medical association, both of Chicago, are the other members of the committee.

Dr. Charles E. Palm

# Dr. Charles E. Palm Named Cornell Dean

ITHACA, N.Y. — Dr. Charles E. Palm has been named dean of the New York State College of Agriculture at Cornell University effective July 1, 1959.

Announcement was made by Deane W. Malott, president of the university. Dr. Palm, an entomologist, succeeds W. I. Myers who is retiring after 16 years as dean and 45 years on the Cornell faculty.

Now director of the Cornell University agricultural experiment station and research director for the state colleges of agriculture and home economics, Dr. Palm is the former head of the university's department of entomology and limnology.

**DAIRY CATTLE IMPORTS UP**

MONTPELIER, VT. — Vermont imported more dairy cattle from other states and Canada this year than in 1957 and sold more dairy animals outside the state, it has been reported here by the Vermont Department of Agriculture.


INDUSTRY PROVED!

**Wenger Animal Fat Feeder**

Wenger's Series 100 Animal Fat Feeder was the first Liquid conditioning feeder developed to correctly meter liquid fats at their optimum mixing temperature into continuous mixers or pellet mills producing hard or soft pellets. Special 100 Series also available for feeding fats to batch mixers. Optional remote controls available for both.

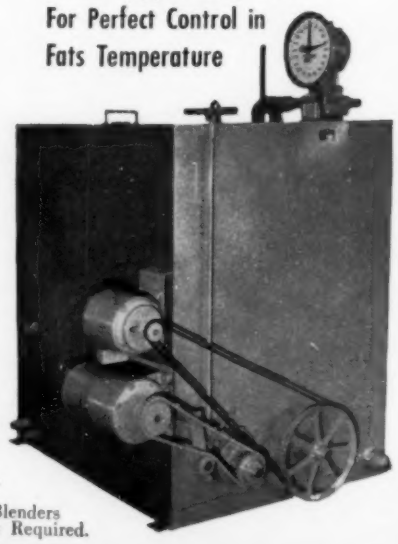
Fats are not to be fooled with. The right equipment is required for precision formulas — for economy of production — for satisfaction to your customers. *Now* after three years of use of the first Wenger Fat Feeders installed, mill superintendents report "correct, trouble-free performance".

More and more — customers of mills putting fats in certain formulas are finding the gain and growth advantages of fats.

Important fringe advantages to mill operation — increased pelleting capacity, reduced die wear and greater uniformity.

***Write For Our Brochure On Animal Fat Feeding—Methods and Equipment.***

***PRODUCTION PROVED—***
For Uniform, Unvarying, But Closely Adjustable Rates of Fats Application, and For Perfect Control in Fats Temperature



Three packaged models of Hi Speed Fat Mixers and Three Sizes of Multi-Blenders Also Available. Liquidmatic Remote Hydraulic Controls Means No Operator Required.

**Wenger Mixer Manufacturing**
SABETHA, KANSAS · PHONE 111
Standard of the Industry for Liquid Feed Mixing, Pelleting and Cooling Equipment.



**The most complete line of DOG FOOD ingredients**

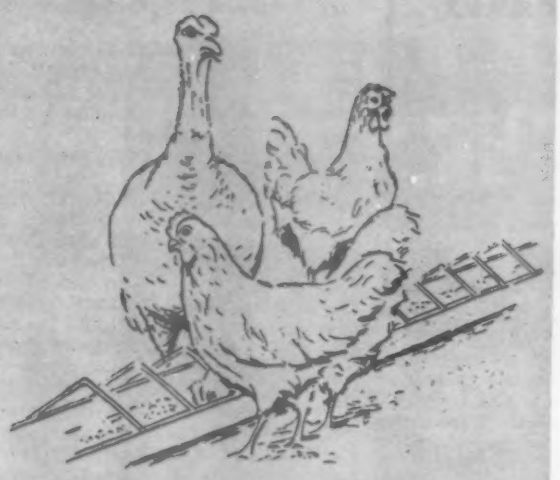
from ONE source

**BOXER BRAND**

44% SOY CAKE-LETS
*expeller, pea-size*
CORN KIB-LETS
*expanded . . . kibbled*
CORN FLAKES
*cooked . . . toasted*
WHEAT KIB-LETS
*expanded . . . kibbled*
WHEAT FLAKES
*cooked . . . toasted*
EXPELLER SOY BEAN MEAL
*and other ingredient specialties*

Nowhere else can you secure such a major part of your dog food ingredients. By combining your ingredient purchases in cars, mixed cars or LCL you are assured of freshness, and better inventory control with lower inventory investment. BOXER ingredients are manufactured by us specially for dogs—they are "prime" products, and not "by-products." Write for current prices and literature.

RALPH WELLS & CO. — QUALITY DOG FOOD INGREDIENTS
MONMOUTH, ILLINOIS



## DaweNzyme
### *PERFORMING COMMERCIALLY*

**DaweNzyme** is long out of the laboratory stage and into commercial usage. Hundreds of carloads of top-performing feeds are being fortified with DaweNzyme, the starch-splitting enzyme system which makes barley the approximate of corn in growth, feed efficiency and palatability.

**DaweNzyme** extensively tested by state experiment stations and proved commercially, is an economic boon to those where barley is available for less than corn. With DaweNzyme, barley can be the principal grain without the former penalties of lowered growth and feed efficiency, compared to corn.

**DaweNzyme** is easily incorporated in the feed formula. It is a dry, free-flowing, stable material. No special handling is involved and ordinary mixing procedures are followed.

*While attention has been focused on barley, tests show small, but consistent, improvements in the utilization of corn itself, when supplemented with DaweNzyme.*

Dawe's

# DaweNzyme©

## makes barley better for birds at lower cost than corn diet.

**1956** ... Dawe's began research and development on the application of enzymes to nutrition.

**1957** ... April ... Washington State College reported starch-digesting enzymes improved nutritional value of barley in poultry feeds.

**1957** ... July ... Dawe's publicly announced DaweNzyme as the first commercially available enzyme system for feed application.

Investigate the economic advantages of fortifying your feeds with DaweNzyme today. It is available immediately in any quantity.

**World's Oldest and Largest Specialists in Vitamin Products for Feeds**

Dawe's

*Plants and warehouses strategically located throughout the United States to serve you without delay.*

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## Customers Are Important

**By Al P. Nelson**

The frost had really shrunk the pumpkins and not just touched them when Joe Brooks and his men trudged to the feed mill for the monthly sales training meeting. On the sidewalk, from the Hotel Manitou to the feed mill, Milt Peters rubbed his cold ears.

"Gee, Joe," he said, his teeth chattering, "you oughta buy a station wagon with excess profits to transport us to these meetings from the hotel. It's too cold to walk."

"You don't complain when redheads make you walk home from out in the country!" Smiley Johnson kidded.

Milt grinned. "I've been lucky so far, fella. And I think my luck will hold."

"Joe!" called out Pop Henley, puffing with the exertion of walking fast, "do we have to have this claptrap nonsense about women all the time? It nauseates me."

"I'll bet it didn't 40 years ago, Pop," called Milt.

Joe held up his hand. "Listen, men, let's keep our family squabbles in the mill and store. Let's stick to advertising in public how good our feed is. Voices carry far on a cold night."

Inside the mill, the men removed their topcoats, rubbed their cold hands and sat in folding chairs, grateful for the oil heat of the room.

When Joe got ready to start the meeting, he said, "Pop Henley has something to say, men."

Whistles and hand clapping greeted the grey-haired, 70-year-old veteran. Pop was a retired mayonnaise salesman who had started to work for Joe part time and kept it up because he liked the human companionship one got around a feed mill. At his age Pop was still quite a salesman and a good workman in short stints.

### Pop Speaks Up

"In looking through my sales folders the other day," Pop said, "I came across a little card about selling. Yes, I still keep up my sales folders. I clip magazines and things like that. Used to do it when I was on the road and have kept it up ever since. Gives a fellow something to think about."

"I don't have trouble finding something to think about," put in Milt with tongue in cheek.

Pop's face got red. "You close your trap for a while, will you?" he demanded. "I got the floor and this is business, not monkey shines."

Milt grinned, happy in the knowledge he always knew how to get Pop's goat, namely, to kid about women.

Pop cleared his throat, glared once more at Milt to keep him silent. "This card which a salesman friend sent to me the other day is a good one," he said. "It talks about the different kinds of customers one finds when selling. Maybe we could talk about the kinds of customers we serve here at the feed mill. I'll start with the list on this card."

Pop held the card up and read:

"THE TEN KINDS OF CUSTOMERS.

"1. Ideal Customer . . . One who looks and likes and buys.

(Turn to page 54)


Rigid laboratory control ends trace-mineral worries

Lime Crest TRADE MARK BRAND

All Lime Crest trace-mineral pre-mixes, both standard and custom made, are under rigid laboratory control. That control begins with the ingredients and doesn't end until the final product has been checked.

Because of Lime Crest's complete laboratory control (both chemical and spectrographic methods are used) the feed manufacturer who uses Lime Crest trace-mineral pre-mixes need not worry that his feeds contain too little or too much of the trace minerals his nutritionist has specified.

LIME CREST TRACE-MINERAL PRE-MIXES

*Made by* LIMESTONE PRODUCTS CORPORATION OF AMERICA, NEWTON, NEW JERSEY

*World's Largest Producer of Crystalline Calcite Products*

CANADIAN DISTRIBUTOR: The Ash Chemical Co., 353 St. Nicholas St., Montreal 1, P. Q.

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MILO-KAFIR-WHEAT-FIELD SEED

•

LUBBOCK, TEXAS

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Make Your Customers

GOOD Customers . . . all year 'round

SUPREME Brand

Condensed BUTTERMILK

HERBERT K. CLOFINE, Inc.

MILK PRODUCTS

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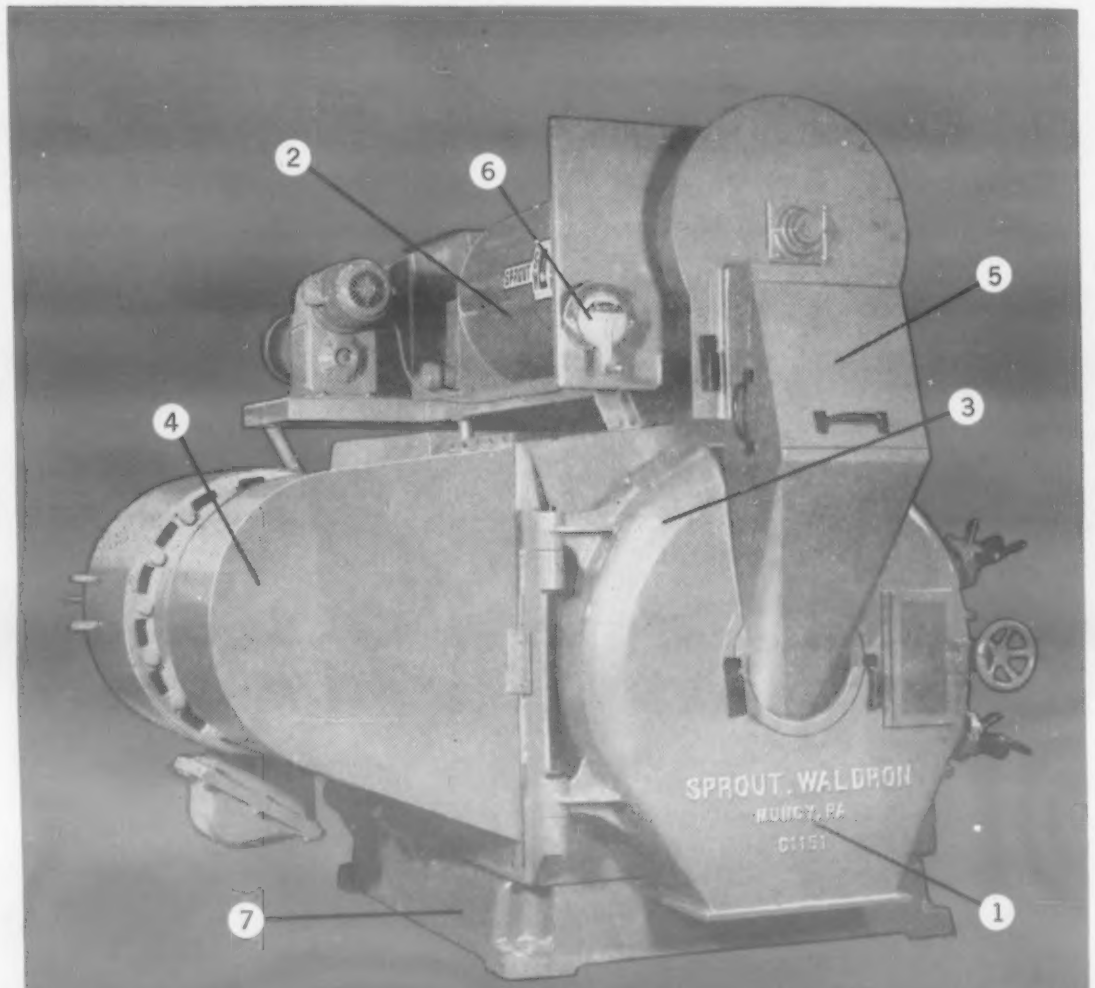
*Now available for* ***SUPER*** *production and* ***SUPER*** *profits!*




1. Wide, wide die with 93% more holes than previous models
2. Stainless steel in-line feeder conditioner (model above has special feeder and conditioner for handling bulky feeds and molasses mixtures
3. Hinged die casing to simplify inspection and maintenance
4. Quiet, trouble-free V-belt drive
5. Built in magnetic protection keeps tramp metal from die
6. Dial control eliminates guesswork in maintaining proper feed rate
7. Rugged cast iron base with integral bearing support gives vibration-free service . . . aids precision alignment

53-104

# SUPER PELLET ACE

## 93% more holes....in NEW wide, wide DIE

The new SUPER ACE, with up to 93% more die holes, produces harder pellets faster, provides longer die life, cuts operating costs and increases production. It offers even more tons per die at lower cost per ton than the world famous PELLET ACE.

In designing the SUPER ACE all the fine quality features which have made Sprout-Waldron pelleters the most imitated in the industry have been retained. You'll find the same stainless steel in-line feeder conditioner; the same hinged die casing; the same quiet, trouble-free V-belt drive; the same built-in magnetic protection; the same rugged, reliable construction and easy-maintenance design for which S-W is so famous.

You'll also find the same S-W customer protection policy, which strives for constant product improvement with maximum concern for owners of current models. Users of the S-W Pellet Ace (1949 and subsequent series) will be able to purchase a special conversion kit, making possible the use of the new wide, wide die and wide rolls. This will mean better pellet quality, longer die life and greater capacity where presently unused horsepower is available.

For the full story on the new SUPER ACE and what it can mean to you in terms of greater production and longer die life, ask for our new illustrated Bulletin No. 201.

**SPROUT, WALDRON & CO., INC.**

*—The Best in Milling Equipment Since 1866—* MUNCY, PENNA.

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# New, full color motion picture on profitable swine raising... shot in the heart of the swine country!

Cyanamid brings you—for showing to your customers—a new, human-interest, 16 mm. sound film on how to raise top market hogs with AUREOMYCIN in good feeds.

"Our County" moves from a hog-judging contest at the county fair—to a picnic scene on a farm—to a swine tour showing farrowing practices, pasture and dry lot feeding, farm management—to a state boar testing station for meat-type hogs.

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**WELL, HERE'S A TIP:**

Investigate the exclusive profit-proved Ultra-Lifed Programs. Feed manufacturers from the Atlantic to the Pacific, from Canada to South America, are really building business with the outstanding, exclusive, Ultra-Lifed programs. **Write today for full details—no obligation**

**Ultra-Life LABORATORIES, INC.**

Main Office and Plant — EAST ST. LOUIS, ILLINOIS

One of the country's oldest and largest manufacturers of vitamin and trace mineral products.


"2. Musical Customer . . . 'I'll make a note of it.'

"3. Animal Customer . . . 'I'll bear you in mind.'

"4. Marine Customer . . . 'I'll be in to sea you.'

"5. Russian Customer . . . 'I'll take one uv itch.'

"6. Constipated Customer . . . 'I'll get rid of what I have first.'

"7. Romantic Customer . . . 'I'd love to buy your products.'

"8. Blanket Customer . . . 'I want you to cover me.'

"9. Barber Customer . . . 'Can't you shave the price a little?'

"10. Maternity Customer . . . 'See me after Labor Day.'"

**More Kinds of Customers**

As Pop finished, the employes laughed. "Hey, Pop," said Butterball, the serious one, "there—there are a few kinds of customers in that list we ain't got here. I never saw a Russian in here."

Pop grinned. "I never did either, Butterball, but I've seen some customers that looked just like them and acted like them."

And once more the employes laughed and Butterball looked more puzzled than ever.

Joe laughed, too. "Thanks a lot, Pop. Your list of customers certainly got us to thinking how important customers are, and how many different kinds there are, and how each needs to be handled differently. Now let's see if we can add to this list of customers Pop has read to us. Who'll be the first to volunteer?"

Milt Peters sighed. "I knew it. Here comes the work part of the meeting. Why can't we have just one meeting where we can relax and not beat our brains out for ideas to make more profit?"

"Because," Joe said patiently, "this is a rough, tough, competitive world and the alert feed organization has got to be on its toes all the time, watching for additional sales and service opportunities."

Smiley held up his hand. "Joe, how about the feed customer who always wants you to pat him on the back when he comes in to buy? He wants you to know everything about him and praise the way he raises crops, hogs, dairy cattle or whatever his specialties may be. If you do he thinks you're the greatest guy in the world and he'll go out of his way to come here to buy."

"Good," replied Joe. "Sincere praise is something every man worthy of his concentrate wants now and then. Some want a stronger ration than others, but just about everyone wants a little."

**Bargain Hunting Customer**

"Then there's the customer that's always looking for bargains," put in Ed Eggers. "We've got one customer over at the Endeavor branch who asks every time he comes in: 'Well, what are you fellows giving away for almost nothin' today?' And when we show him some specials, he usually buys one or two. He's hungry for bargains, that guy."

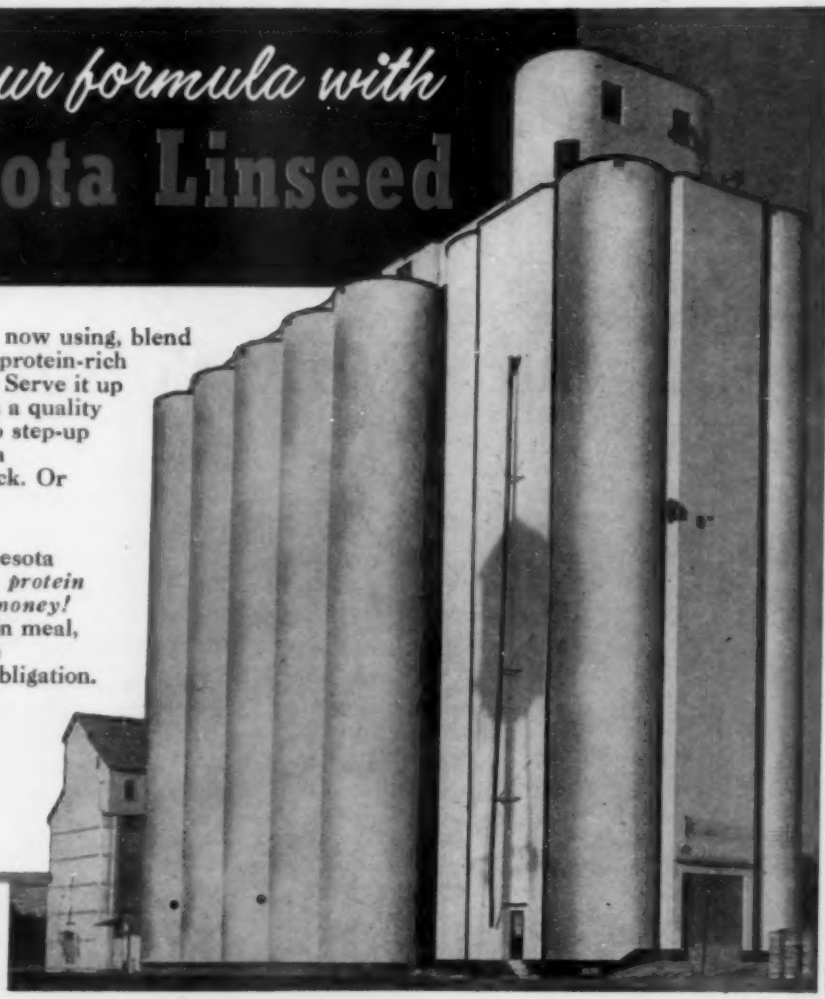
Joe nodded. "Yepp, that's why department stores always offer bargains. Some women act like bird dogs when they smell that word. And some men, too."

"Then there's the customer that wants feed advice and the man that doesn't," said Molasses Moeller, operator of the mobile milling unit. "I got one fellow on the route who knows how much molasses to use in his feeds and he won't listen to anyone else's recommendations."

"By gol," spoke up Frenchy Le Fave, Molasses' helper on the mobile unit, "we have some fellair he like to tell a good joke, you know, and zen we have other fellair he like to hear a good joke and he get mad if you don' tell one every time you come to grind feed. Some like ze clean joke and some like that othair kind, you know?" He shrugged.

And so the conversation went on. Later, when Joe closed the meeting, he smiled. "This has been an excellent meeting, thanks to Pop starting it that way and the rest of you contributing your customer ideas. Now, I think all of you know more about customers and how to handle them. Let's all remember that almost every customer is different from the next one. And let's put our customer knowledge to use and make that cash register click more often."


Fortify your formula with Minnesota Linseed



To the formulas you are now using, blend in a generous quantity of protein-rich Minnesota Linseed Meal. Serve it up to your feed customers as a quality mix, carefully balanced to step-up milk production and put a "finish" on feeder livestock. Or sell it straight, by the bag if you prefer.

Fortify profits with Minnesota Linseed Meal—*your best protein supplement for the least money!* It's convenient to handle in meal, pellet, or grit form. Free nutritional help without obligation.

Write, wire or phone us your requirements . . .

**Minnesota LINSEED OIL COMPANY**

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VITAL-MIN a Pre-Mix

VITAMINS MINERALS

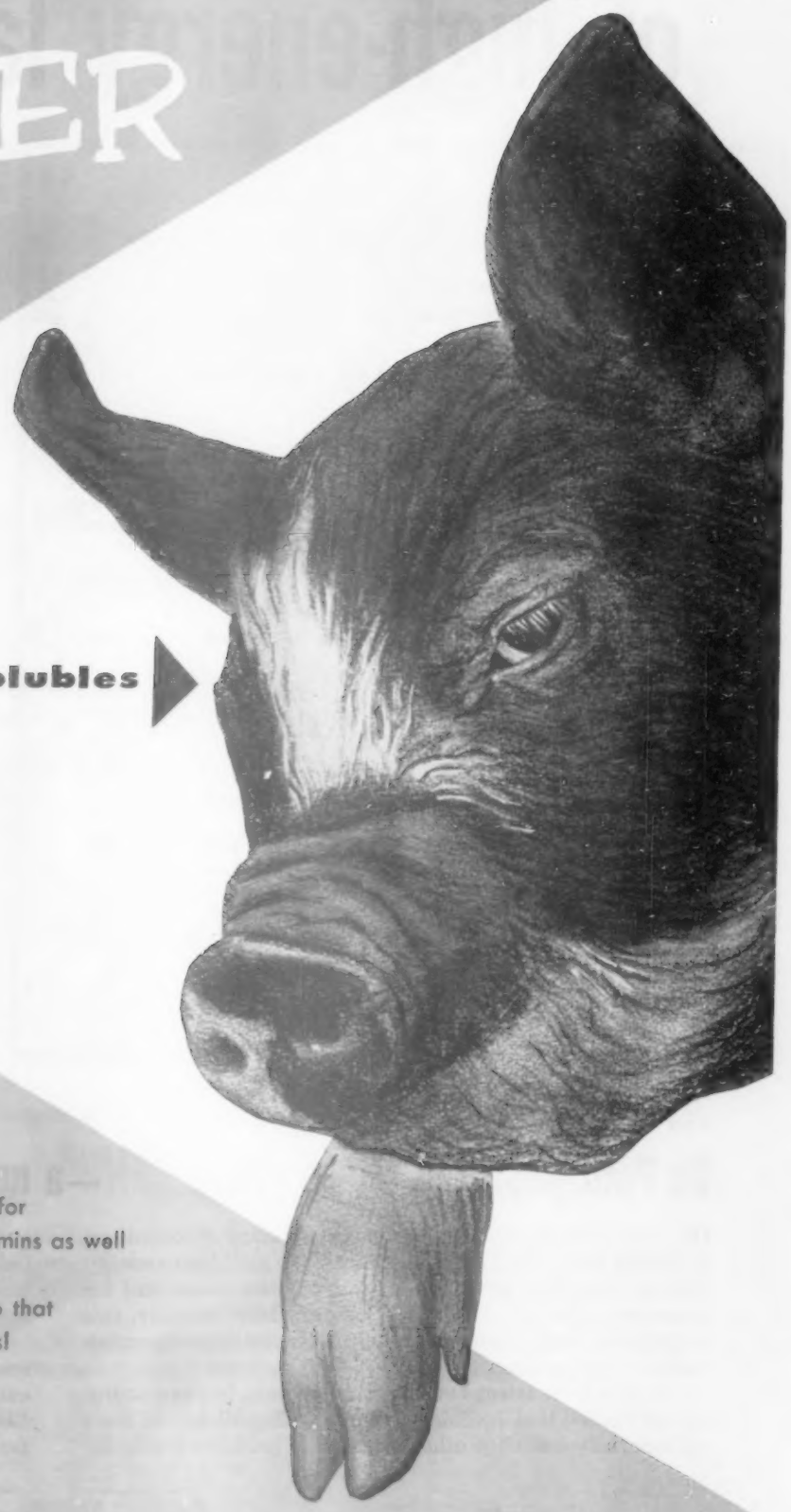
Made by the builders of VITAMINIZED and MINERALIZED CONCENTRATES since 1922.

Jobbers and Warehouses From Coast to Coast

THE JERSEE CO. MINNEAPOLIS MINN.

WRITE TODAY FOR DEALERS SALES HELPS!

# Piglets to Pigs QUICKER



**. . . with seagram solubles**

Getting piglets off to the right start is the most important stage of the feeding cycle. Research has proved that Seagram Solubles help to get piglets to market weight faster because they are not only a rich source for protein, but also contain all of the important B-vitamins as well as grain fermentation growth factors.

Add this dynamic supplement to your swine rations so that your customers can help themselves to bigger pig profits!

**JOS. E. SEAGRAM & SONS, INC.**
**Louisville, Kentucky**
*GRAIN PRODUCTS DIVISION*

Seagram SERVICE TO AGRICULTURE

## DU PONT TESTS SHOW

# Methionine supplementation improves the efficiency of high-energy laying rations

### 17-WEEK and 56-WEEK TESTS prove value of Methionine

Tests were conducted with 1,200 birds at a large commercial farm

**17-WEEK TEST**

Feed efficiency: lbs. feed/lbs. egg produced

| | | | | |
|---|---|---|---|---|
| Pre-experimental treatment (4 weeks) on common diet | 3.99 | 3.80 | 3.81 | 3.68 |
| | #1 Ration 16.5% protein 922 cal./lb. | #2 Ration #1 with 0.05% methionine added | #3 Ration 16.5% protein 1009 cal./lb. | #4 Ration #3 with 0.05% methionine added |
| Experimental Period (13 weeks) | 4.50 | 4.17 | 4.43 | 3.83 |
| Change | 0.51 | 0.37 | 0.62 | 0.15 |
| Effect of Methionine (lbs. of feed saved) | — | -0.14 | — | -0.47 |

**56-WEEK TEST**

Feed efficiency: lbs. feed/lbs. egg produced

| | | | | |
|---|---|---|---|---|
| | 3.58 | 3.66 | 3.65 | 3.41 |
| | #1 Ration 15.6% protein 991 cal./lb. | #2 Ration #1 with 0.05% methionine added | #3 Ration 14.9% protein 1096 cal./lb. | #4 Ration #3 with 0.05% methionine added |
| Effect of Methionine (lbs. of feed saved) | — | -0.08 | — | -0.24 |

Two tests conducted by Du Pont on 1,200 birds at a large commercial poultry farm in New Jersey show that methionine added to high-energy diets improves the feed efficiency of egg production.

In a 17-week exploratory test, the basal diet supplemented with methionine produced a pound of eggs on *0.14 pound less feed* than when unsupplemented. When the energy level was increased about 10%, the advantage due to methionine more than tripled. (See box left.) A 56-week test confirmed these findings.

In both experiments, the increase in energy content was without effect until additional methionine was supplied to diets—demonstrating that methionine is the first limiting amino acid for egg production in ordinary feed mixtures.

Furthermore, mortality was lower in all diets containing supplemental methionine. Hens receiving unsupplemented high-energy rations gained more body weight than those fed lower-energy feeds. This gain was considerably reduced when methionine was added. For a complete report on these tests and the rations used, write the Du Pont district office nearest you.

## AND NOW...

## Du Pont Research brings you HYDAN—a new, lower-cost source of methionine

Over the past 10 years, Du Pont has made many contributions to raising better poultry. In pioneering the methionine energy concept, Du Pont gave poultry nutritionists a new tool for measuring adequate nutritional balance. More recently, this concept has been expanded to include the nutritional requirements of laying hens.

"Hydan," the latest Du Pont achievement, is a new source of methionine that contains 90% active ingredient and costs substantially less than other methionine products previously available. Now the best way to obtain an effective protein in today's poultry rations—at the best possible cost—is to use new "Hydan" as your source of supplemental methionine activity.

"Hydan" is the latest result of Du Pont's continuing research in feedstuffs to help all poultry raisers boost efficiency, cut costs and thereby increase profits. You can get lower-cost "Hydan" by contacting the Grasselli Chemicals District Office nearest you.

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. . . THROUGH CHEMISTRY

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WYNNEWOOD (PHILA.), PA., 308 E. Lancaster Ave. • IN CANADA: Du Pont Company of Canada (1956) Limited, P. O. Box 660, Montreal, Quebec

## *More Layers in Northeast Noted*

TRENTON, N.J. — The number of layers in the Northeast will be 6% larger on Jan. 1, 1959, according to estimates of producers surveyed by the Northeastern Poultry Producers Council.

The survey indicated that the number of fowl yet to be marketed is average (earlier there were 10-15% more to go than a year ago), suggesting that fowl have moved to market at better than usual rates up to now. It also indicated a large late crop of pullets, since about a third of the pullets are to be housed and are not yet in the laying houses.

Results of the survey were published in the October issue of NEPPCO News.

The approximately 65 producers surveyed predicted egg prices for one, two and three months ahead, and for next April 1. The estimates for white eggs at New York ran 54, 47, 40 and 35¢ respectively, with Boston browns 1-2¢ less each time.

The producers found little actual evidence of contracting among egg producers—"some talks of deals, but no confirmation," according to NEPPCO News.

Chief headaches of poultrymen listed in order of frequency mentioned by the surveyed producers are: high costs, quality control, disease, integration, labor efficiency, automation and inflation. When they were asked if there was any interest in production controls, the answers were almost unanimous—no.

**Broiler Production**

A summary of a NEPPCO survey of broiler growers is as follows:

"Prices have continued to decline, as was anticipated. Chick placements have been following suit. While opinions and actions vary widely, the trend is definitely toward more caution, a 'culling' of growers to eliminate the less efficient, and a curtailing of operations by independents.

"Some cancellations are reported, but the commercial contractors are placing birds—if for no other reason than to hold good growers for later operations.

"The percentage of idle houses has increased in almost all areas. Some are 'stretching out' by taking more time between lots. Others are reducing the number of birds per house.

"Chick prices have softened generally and there seems to be no shortage of chicks or hatching eggs in sight. Feed prices seem to have softened just a bit, but official figures do not reflect this."

## New Manager Named

JEFFERSON, ORE.—Appointment of Bill Moye, former manager of the Marion-Linn Warehouse, as plant manager of the new Pelco pelleting plant, Jefferson, was announced recently. Monte Weddle, general manager, said Mr. Moye will have complete administrative jurisdiction. Mr. Weddle plans to return to farming in the spring. Five men and a bokkeeper are employed in the new, year-around business.

Several lines of feeds handled by Marion-Linn Warehouse before it burned this summer will be handled now by the pelleting firm, along with a complete line of supplies of poultry and livestock requirements.

## Promotions Announced By A. E. Staley Firm

DECATUR, ILL. — Lloyd A. Winslow, manager of the formula feeds department of the A. E. Staley Manufacturing Co., Decatur, has announced two promotions in the department's field sales organization.

Walter M. Jordan, who had been assistant territory manager in Illinois, was named territory manager in southwestern Wisconsin. He joined the firm's formula feeds department in 1954. Paul L. Collingwood, who had been assistant territory manager in Michigan, was named territory manager in Ohio. He joined the A.E. Staley firm last year when the company acquired Arcady Farms Milling Co.

**Wide 24" Conveyor and Twin Spinners Deliver Fast, Uniform Spreads!**

**Simple operation saves time and upkeep: set feedgate opening . . . start truck engine . . . start spreading!**

The L-19S body is 6" higher and more heavily reinforced than other lime spreaders. This means bigger payloads, with less blowing and no body warp or twist. 45° angle side slopes help prevent bridging and permit a lower center of gravity, a more attractive appearance.

Typical of its quality construction are such exclusive features as: dust and moisture-sealed gears with Timken roller bearings, heavy-duty roller-type conveyor chain and an optional endgate that swings completely open for stock piling.

New Leader *Engine-driven* COMBINATION Spreaders are also available: Model L-22S with a 7.0 h.p. engine and Model L-32S with a 12.5 h.p. engine to deliver plenty of power for heavy applications of lime or fertilizer.

**NEW LEADER Model L-14S LIME SPREADER**

**is a high quality rig with a low price tag!**

Cut your in-the-field costs with this simple to operate, easy to maintain spreader. Merely set the feedgate opening, start the truck, engage the PTO and start spreading! Material is delivered to the twin spinners over a wide 24" conveyor. Also available with a center dump for stock piling.

New Leader **Engine-driven** lime spreaders: Model L-52S has a 24" conveyor and is built for heavy-duty use. Model L-62S with a 30" conveyor is available for widespread applications. Both spreaders can also be used for fertilizer.

**NEW LEADER L-42S Mobile Blender Accurately Blends and Spreads 3 Fertilizers At the Same Time!**

Permits the operator to control both the amount of spread and ratio of 3 fertilizers depending on varying soil conditions! A 7 h.p. engine drives the twin spinners at a constant rate. A 36" belt-over-chain conveyor is powered from a driveshaft drive and synchronized to truck speed.

*Ask Your Nearest NEW LEADER Distributor for a Demonstration!*

ALA.—G. C. Phillips Tractor Co., Inc., Birmingham and Prichard.
ARK.—Truck Eqpt. Co., Fort Smith, Springdale
Southern Eqpt. Co., Little Rock, El Dorado
COLO.—Madron Mfg. Co., Inc., Denver
DEL.—Bohr Spreader Service, Inc., Harrington
FLA.—Henry W. Conibear, Lakeland
G. C. Phillips Tractor Co., Inc., Birmingham and Prichard (Ala.)
GA.—Brooker Truck Eqpt. Co., Atlanta
IDA.—Oscar Bennion, Murray (Utah)
ILL.—D. H. Thomas & Son, Inc., Rockford
Koste Mach. Co., Inc., Robertson (Mo.)
Truck Eqpt. Co., Peoria
IND.—Emmert Trailer Corp., Elkhart
South Side Eqpt. Co., Inc., Indianapolis
Mulzer Brothers, Tell City, Ind.
IOWA—Badger Body Mfg. Co., Omaha
Snyder-Meylor Co., Sheldon
Wendler-Kraus Eqpt. Co., Inc., Cedar Rapids
KANS.—Perfection Truck Eqpt. Co., Wichita
Dealers Body & Eqpt., Kansas City
Perfection Spring & Eqpt., Kansas City
KY.—Mulzer Brothers, Tell City (Ind.)
Md.—Bohr Spreader Service, Inc., Harrington (Del.)
MICH.—Gaes Seed & Eqpt. Co., Saginaw
Emmert Trailer Corp., Elkhart (Ind.)
Ostrom-Johnson Co., Rice Lake (Wis.)
Riedy-Manner Truck Eqpt., Toledo (Ohio)
MINN.—Snyder-Meylor Co., Sheldon (Iowa)
Ostrom-Johnson Co., Rice Lake (Wis.)
MISS.—A. P. Lindsey, Distr., Inc., Jackson
MO.—Koste Mach. Co., Inc., Robertson
Dealers Body & Eqpt., Kansas City
Perfection Spring & Eqpt., Kansas City
NEB.—Agrifirst Chem. Corp., Lincoln
Snyder-Meylor Co., Sheldon (Iowa)
NEV.—Lovelock Welding, Lovelock
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OHIO—Orran Hofstetter, Orrville
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Schodorf Truck Body & Eqpt. Co., Columbus
PA.—Annville Body Co., Annville
Ira D. Haines, Waynesburg
D. L. Phillips, Damascus (Ohio)
S.C.—O. H. Stanard, Raleigh (N.C.)
S.D.—Snyder-Meylor Co., Sheldon (Iowa)
TENN.—Tennessee Distr. Co., Donelson
UTAH—Oscar Bennion, Murray
VA.—O. H. Stanard, Raleigh (N.C.)
W. VA.—Farmers' Truck & Impl. Co., Buckhannon
D. L. Phillips, Damascus (Ohio)
WIS.—Brooks Industrial Sales, Inc., Sun Prairie
Ostrom-Johnson Co., Rice Lake

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Animal Fat Treated
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Suncured Alfalfa—20% Cane Molasses
**ALFA—CANE**
Dehydrated Alfalfa - Animal Fat - Cane Molasses
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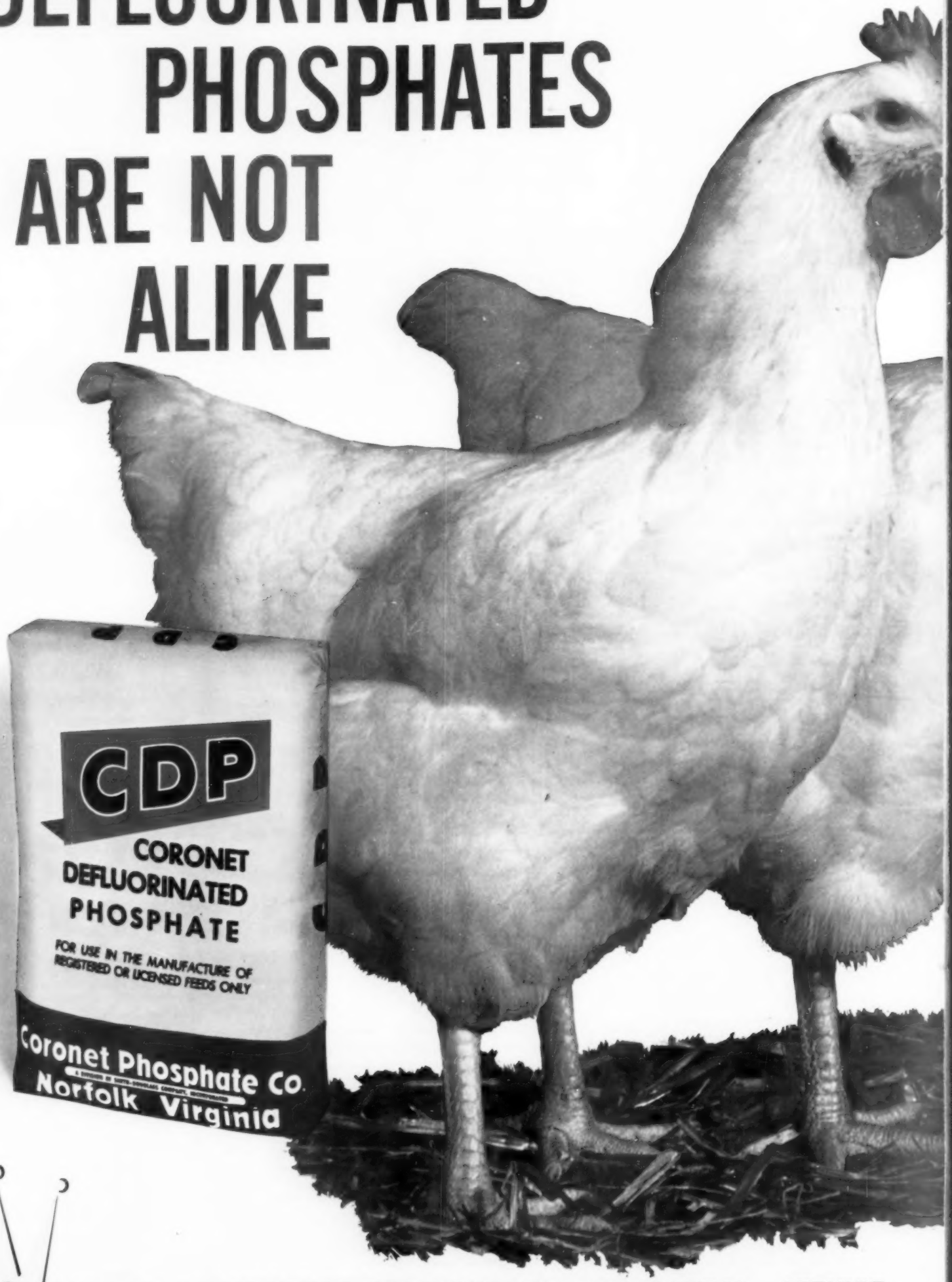
# ALL DEFLUORINATED PHOSPHATES ARE NOT ALIKE

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1. "The Availability of Phosphorus from Different Sources for Poults Fed Purified Diets." Poultry Science, Volume XXXIII, Number 5, September, 1954.
2. "A Comparison of the Availability, to the Young Growing Chicken, of the Phosphorus in Defluorinated Phosphate and Analytical Reagent Grade Dicalcium Phosphate," by Lime Crest Research Laboratory, October, 1954.
3. "The Availability of Phosphorus from Different Sources for Poults Fed Practical-Type Diets." Poultry Science, Volume XXXIV, Number 5, September, 1955.
4. "Phosphorus Availabilities as Determined by New Feeding Experiment," by Lime Crest Research Laboratory, November, 1955.
5. "Phosphorus Availability Assays by the University of Illinois Method," (as presented by Dr. H. H. Scott) by the Laboratory of Vitamin Technology, Inc., September, 1956.

CORONET Defluorinated Phosphate is a direct result of creative development, quality production and CONTINUING RESEARCH. No phosphorus feed products are subjected to more meticulous quality control than those produced by CORONET.

### Guaranteed Uniform Analysis

| Phosphorus | Calcium | Fluorine |
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| 17.0% min. | 34.0% min.<br>36.0% max. | 0.17% max. |

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| PRODUCT | Solubility in 0.4% HCl | Solubility in 2% citric acid | Solubility in neutral ammonium citrate | Average total solubility |
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| CDP | 100.00% | 87.14% | 86.16% | 91.10% |
| Product A | 96.48% | 51.19% | 19.41% | 55.69% |
| Product B | 82.79% | 38.61% | 9.08% | 43.49% |

Chemical solubilities determined by TERMINAL TESTING LABORATORIES, INC., Los Angeles 33, Cal.

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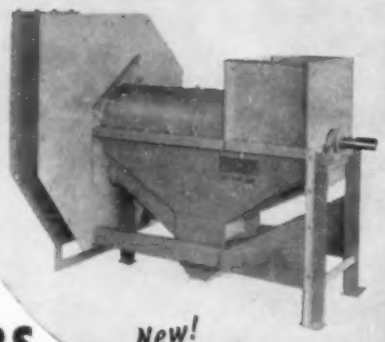

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**POULTRY DISLAY—Nichols, Inc., Exeter, N.H., was represented by an exhibit at the recent Levant Fair, Bari, Italy. Shown at the display in the U.S. pavilion are two Italian hostesses, representing the U.S., and Paul Findlen (center), assistant agricultural attache at the American Embassy in Rome. Sam Allen of the Nichols firm is showing them a typical Nichols 108 pullet.**

## NTF to Insure Third of U.S. Turkeys

MT. MORRIS, ILL.—"One out of every three turkeys being grown in the U.S. this year is insured in the National Turkey Federation approved turkey insurance program," reported A. H. Trask, chairman of the NTF turkey insurance committee, Black River Falls, Wis. The total number insured by the end of the year will range between 25 and 30 million birds, he said.

This report was made at the meeting of members of the NTF committee with representatives of the Farmers Mutual Hail Insurance Co. in the turkey department office in St. Paul. This meeting is held annually to review the experience of the program and make plans for the following year.

In reviewing details of the year's experience to date, Kenneth Nelson, manager, turkey department, Farmers Mutual Hail Insurance Co., indicated about $500,000 has been paid out to growers to date for losses. While loss ratios in some states have been high the average for the nation is normal.

Unless losses should be extremely heavy during the fall and winter storm period, the total experience should be very good for the first full year with the Farmers Mutual Hail Insurance Co. The Property Owners Mutual Insurance Co. merged with this firm last year, providing an even larger and stronger company to carry the insurance plan approved by the NTF, according to federation officials.

**SAFFLOWER FIRM CHARTERED**

DENVER—Safflower Seeds Corp., Denver, has been granted a charter. Theodore W. Lord, C. W. Shelton, Jr., and James T. Buyer are directors. Capitalization is 400,000 shares at $2 each.


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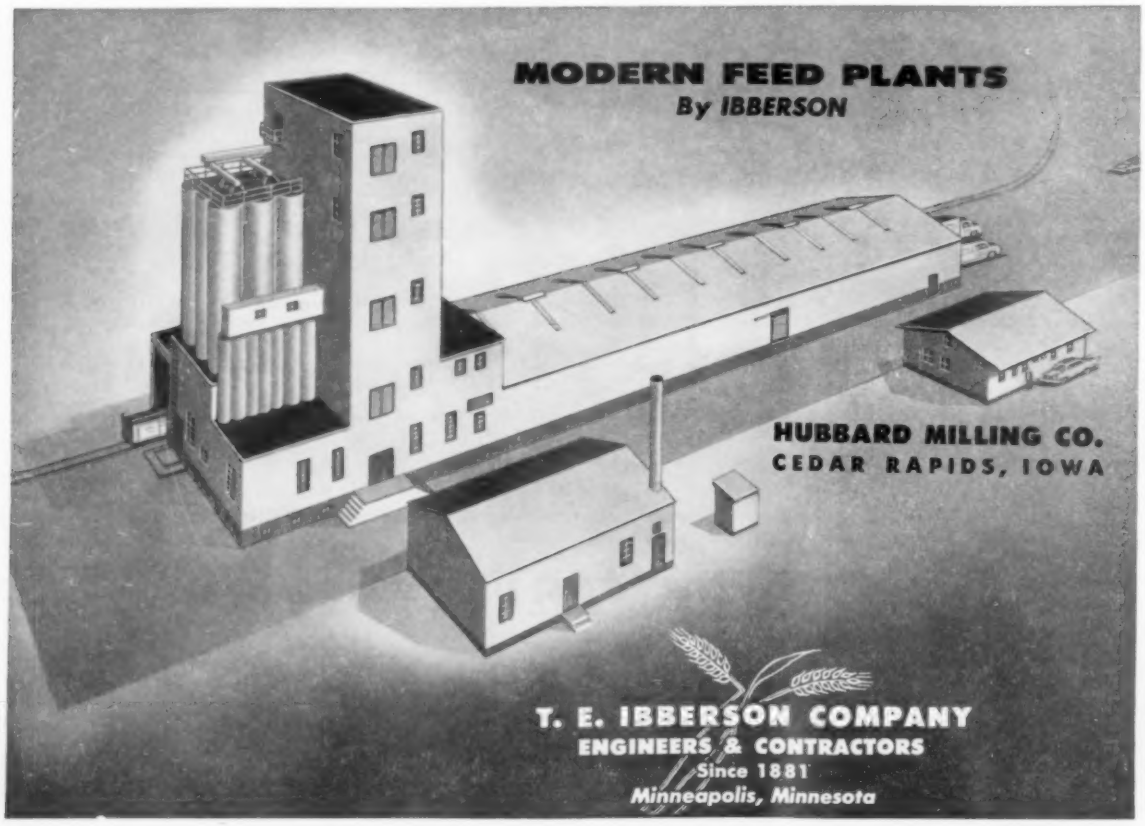

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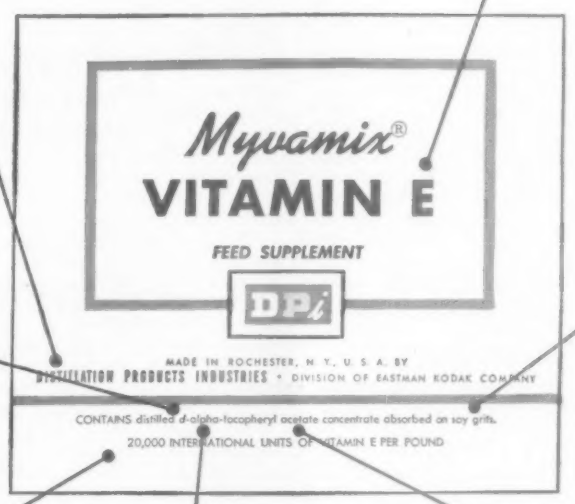
The "d" means the vitamin E in *Myvamix Vitamin E Feed Supplement* is the same stereoisomer that appears in nature. 1 milligram of *d*-alpha-tocopheryl acetate is equivalent to 1.36 International Units of Vitamin E.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The "acetate" means that the vitamin E in *Myvamix* is really stable. Tests show no loss of potency even after storage in finished feeds for six months at 100 F. The full potency you put in the feed is there when the feed is fed.

**Linear Programming—Part 6**

# Where Should Feed Be Milled?

**Linear programming can help in finding answers to such things as where to manufacture feeds, where to warehouse or store products, new plant locations and planning capital investments**

**By Dr. Robert F. Hutton**
**Pennsylvania State University**
Copyright 1958, Robert F. Hutton

*EDITOR'S NOTE: This is the sixth of seven articles in a series on the use of linear programming in the feed industry. Previous articles have dealt primarily with the application of the linear programming technique in feed formulation and the determination of least-cost rations. In this article, Dr. Hutton explains other uses of the system, including the solving of problems relating to transportation. This article will be of interest to management and other feed men as well as those in technical positions. The author, an agricultural economist at Pennsylvania State University, University Park, has been a leader in research on the use of linear programming and electronic computers in handling feed mix and other problems.*

The question posed in the title is subject to several interpretations. Which interpretation you make will probably depend upon your position in the feed milling industry, or whether you are associated with the industry. It really does not matter what interpretation you make; what we have to say will apply to all. We hope to show how linear programming can be used in answering questions of this kind.

**The Problems:** Let us take a look at the kind of problems we intend to discuss. First, we have the basic problem of producing or processing feed ingredients, feeding livestock, and delivering animal products to the consumer wherever located. If we analyze the problem from the standpoint of efficiency the most logical point to start is with the consumer of the livestock products. In answering the question "How can the consumers' wants be satisfied most efficiently?" we will also answer the related questions of "Where will the feed ingredients be produced or processed?", "Where will the feed be milled?", and "Where will the livestock be fed?" These are interesting questions on what may be termed the "policy" level. Someone should be (and well may be) working on them since the answer could be of great use to you, but the breadth of such an investigation makes it a poor vehicle for discussing the methodology we want to present.

We can narrow the focus considerably by assuming away the questions of "Where should the feed ingredients be produced or processed?" and "Where should the livestock be fed?" We can do this conveniently by taking the present location of production and feeding as is given in our problem. There is danger in this. If we can be sure of anything, we can be sure of change. And, at this particular point in history, we seem to be on especially weak ground in assuming that livestock feeding will follow in the future the present pattern. Unfortunately we have no good alternative assumption.

Even if we assume away the above two questions, we are still left with a somewhat meaningless question of "Where should the feed be milled?" This question would have clear meaning if the milling industry were either a monopoly or a public utility. But, not unfortunately, it is neither. Some fairly large firms in the industry may be interested in this question from the standpoint of planning their future operations to be consistent with the pattern of efficient milling indicated by the answer obtained. But, probably most of you are interested in the question as it relates to your part of the total picture. You want to know where to buy ingredients, where to mill them, where to warehouse the mixed feeds, and possibly, where to retail them as well. At this level we are much safer in assuming the market for ingredients and the market for mixed feeds to be given.

**The Variables:** The most important variable in the problem of deciding upon the location of mill facilities is probably transportation cost. This is not a problem arising from freight rate structures, although linear programming is being used to select optimum routings. The other important class of variables may be termed "in-plant" cost of milling. This element of cost may have several facets of interest. For example, cost is a function of scale of output, and the ratio of current to capital costs changes with scale of plant. Storage and warehousing costs may be counted as in-plant costs.

Another factor that may be variable in the long run, but is usually fixed in the short run, is that of the product mix. We can reason that each firm in the industry has a particular limited line of feeds that would maximize its net revenue. However, there is a tendency for firms to offer a full line of feeds for competitive reasons; or if it specializes, the firm may concentrate on a full line of feed for a particular class of livestock. This lack of specialization may increase cost somewhat (this is questionable), but offering a full line of feeds is an advantage to the customer that must be weighed against the cost increase. We will return to this question relating to the optimum line in the next article. For the moment we will accept the product mix as given.

**A Simple Illustrative Problem:** Let us work out a problem simple enough to permit solution by inspection. After we have established the principles of solution by linear programming, we will develop a problem whose solution is less obvious.

Our objective is to deliver a million tons of feed per year to a particular point, "C", at least cost. To add a little realism we could suppose we are exporting feed through a seaport, "C".

The feed itself consists of soybean oil meal (SOM) and corn in the ratio of 25 parts SOM to 75 parts corn. We can presume that we have determined that this is the least-cost formula for all possible sets of ingredient prices. All of the SOM is bought f.o.b. at a particular plant at city "D". All the corn is bought f.o.b. at another city, "E".

Our firm has two plants in different cities of equal capacity. 750,000 tons per year; but one, plant "A", is a new modern plant, and the other, plant "B", is outdated. In-plant cost of milling the feed in "A" is only $1 per ton; while, the cost in "B" is $2. (These are low costs, but our feed is a very simple one.)

We will summarize the transport costs in the following "mileage-chart" table:

| | C | D | E |
|---|---|---|---|
| A — | $6 | $5 | $4 |
| B — | $5 | $4 | $3 |

All the possible routes not given in this table are irrelevant either by fact or assumption.

We can solve this problem by inspection as follows:

A. Cost through plant A to C (per ton)
Transport cost on ¼ ton SOM from D to A = ¼ × $5 = $1.25
Transport cost on ¾ ton corn from E to A = ¾ × $4 = 3.00

| | |
|---|---|
| Total ingredient transport cost | $4.25 |
| In-plant milling cost | 1.00 |
| Mix transport cost from A to C | 6.00 |
| Total of transport and in-plant costs | $11.25 |

B. Cost through plant B to C (per ton)
Transport cost on ¼ ton SOM from D to B = ¼ × $4 = $1.00
Transport cost on ¾ ton corn from E to B = ¾ × $3 = 2.25

| | |
|---|---|
| Total ingredient transport cost | $3.25 |
| In-plant milling cost | 2.00 |
| Mix transport cost from B to C | 5.00 |
| Total of transport and in-plant costs | $10.25 |

We would want to put all of the feed we could through plant "B" and the remainder through plant "A"; or 750,000 tons through B; 250,000 tons through A. Obviously, someone made a mistake in locating the new plant at "A" or perhaps conditions have changed.

We will now solve this problem by linear programming, and you will be impressed by the relative difficulty of this method compared to the inspection method just completed. But, reserve judgment until we get to discussing realistically complicated problems.

As was the case with the feed mix problem we start the analysis with an "artificial" solution. That is, one we know we can beat. Let us suppose in this case we solve our problem by letting our plants stay idle and hiring a competitor to mix for us. He is not a very friendly fellow so he charges

**TABLE 1. Substitution Coefficients for Alternatives to Hiring Mixing Services and Letting Plants remain Idle in Illustrative Problem.**

| Activity to be reduced | Cost of activity to be reduced | Substitution coefficients for— Mill in "A" and ship to "C" | Mill in "B" and ship to "C" |
|---|---|---|---|
| Hiring mixing service | $100 | 1 | 1 |
| Leaving plant A idle | 0 | 1 | 0 |
| Leaving plant B idle | 0 | 0 | 1 |
| Cost of alternative (T) | | 11.25 | 10.25 |
| Displacement value (T) | | 100.00 | 100.00 |
| Displacement value less cost of alternative | | 88.75 | 89.75 |

**TABLE 2. Substitution Coefficients for Alternative of Hiring Mixing Services and Letting Plant "A" Remain Idle in Illustrative Problem.**

| Activity to be reduced | Cost of activity to be reduced (T) | Substitution coefficients for milling in plant "A" and shipping to "C" (T) |
|---|---|---|
| Hiring mixing service | 100 | 1 |
| Leaving plant A idle | 0 | 1 |
| Milling in "B" | 0 | 0 |
| Cost of milling in "A" and shipping to "C" | | 11.25 |
| Displacement value | | 100.00 |
| Displacement value less cost | | 88.75 |

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## CONTENTS

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| Mineral | 6% | T.D.N. | 80-85% |
| T.D.N. | 85% | Fibre | 12-14% |
| B Complex Vitamins | | B Complex Vitamins | |
| Growth Factors | | Growth Factors | |

Feed registration time is here again! This year be sure that your feed tags include Distillers Dried Grains and Dried Solubles. More and more feed mixers are learning that Distillers Dried Grains and Dried Solubles supply the important natural B-vitamins, proteins, minerals, and other growth factors, which produce real feed power.

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| | |
|---|---|
| Displacement value | 100.00 |
| Displacement value less cost | 88.75 |



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us so much that transport and mill cost amount to $100 per ton of feed laid down at "C".

We have as alternatives to this the use of a ton of plant capacity in plant A to produce a ton of feed to ship to C. This would cost us $11.25 per ton but it would permit us to hire one ton less of milling service from our competitor. Since that hired service costs $100 per ton, we would save $88.75 per ton put through A. We have a similar alternative in putting feed through B, but here our saving is $89.75. We can represent these alternatives in a substitution coefficient table similar to the tables used in the discussion of feed-mix problems. See Table 1.

Notice especially how nice our substitution coefficients come out. They are all either "0" or "1". This is a characteristic of this kind of problem and makes computation extremely easy.

From Table 1, we see that the alternative of using plant B is the best in terms of cost reduction. Now, we have the job of finding out how much of this alternative we can use. We are hiring 1 million tons of feed mixed, so from that standpoint we could put a million tons of feed through B. However, we are only letting 750,000 tons capacity go unused in plant B. Thus, we can use the alternative of milling and shipping to C from B to the extent of 750,000 tons. As with the feed-mix problem, we can develop another set of substitution coefficients. These are given in Table 2.

The important thing to note here is that the coefficients are unchanged from Table 1. This again is characteristic of this kind of problem.

We can exercise the alternative of using plant "A" until all of the hired milling is displaced—that is to 250,000 tons. This will leave 500,000 tons of capacity in plant "A" unused. This is the same as our solution by inspection.

This problem could be cast in terms of the "simplex" tableau as shown in Table 3.

Thus, if you are tooled to run feed-mix problems you can use the same solution routine to solve your "transportation" problems (1).

There is another intuitive method of solving these problems. It is termed the "stepping-stone" method (2). We will not go into its use here, but I would recommend you check the reference on this before setting up a problem.

We cheated a little on the problem to achieve simplicity, but now we must return to develop a point skipped over in the above discussion. We did not determine within the linear programming model how much it would cost to assemble the ingredients at the two plants. We merely took $10.25 and $11.25 as though they were given to us. But, these will not be given in most real problems. Suppose for example we had two sources each for corn and SOM, we would then have had four possible ingredient assembly costs for each plant. We could compute all of these and select the least-cost, but suppose we had 20 points for each. This would be too much! So we really should include the ingredient assembly costs in our model. We have done this in the "simplex" tableau in Table 4.

This is quite a bit bigger but still simple to solve. It gives the same result as the previous model. Now, for example, if another source for SOM should enter the picture, we are in a position to add it to the problem.

**Another Illustrative Problem:** Let us assume now that you have the following set of problem conditions:

1. Five mills in different geographic locations.
   (a) In-plant cost of each plant varies by level of output of the plant.
   (b) In-plant cost of each plant varies according to the kind of feeds milled.
2. Two-hundred points of consignment for each kind of feed.
3. Thirty kinds of feed.
4. Fifty ingredients available from a total of thirty shipping points.
5. The feed mixes are formulated for least-cost at point of consignment.

You, the general manager, want to know the answers to the following questions that will maximize your revenue:

(1) How much of each feed to mill at each location?

(2) What volume (including none) of each kind of feed to ship from each mill to each consignment point?

(3) What volume of each ingredient to purchase and ship from each shipping point to each milling point?

Now, we really have a challenging problem. You are asking for nearly a half-million bits of information. What could you do with the answers to 475,150 questions? By the time you got them filed, they would be out of date. This problem is as unrealistically complex as the former one was unrealistically simple. There is no logical reason why this problem could not be solved, but there is a

(Turn to page 67)

**TABLE 3**

| $C_j$ → | | | -100 | 0 | 0 | -11.25 | -10.25 |
|---|---|---|---|---|---|---|---|
| ↓ | | $P_0$ | $P_1$ | $P_2$ | $P_3$ | $P_4$ | $P_5$ |
| -100 | $P_1$ | 1,000,000 | 1 | 0 | 0 | 1 | 1 |
| 0 | $P_2$ | 750,000 | 0 | 1 | 0 | 1 | 0 |
| 0 | $P_3$ | 750,000 | 0 | 0 | 1 | 0 | 1 |

Where:

$P_1$= Hire of mixing services
$P_2$= Non-use of plant A
$P_3$= Non-use of plant B
$P_4$= Milling in A and Shipping to C
$P_5$= Milling in B and Shipping to C

**TABLE 4**

| $C_j$ → | | | -M | 0 | 0 | -M | -M | -M | -M | -7 | -7 | -5 | -4 | -4 | -3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ↓ | | $P_0$ | $P_1$ | $P_2$ | $P_3$ | $P_4$ | $P_5$ | $P_6$ | $P_7$ | $P_8$ | $P_9$ | $P_{10}$ | $P_{11}$ | $P_{12}$ | $P_{13}$ |
| -M | $P_1$ | 1,000,000 | 1 | | | | | | | 1 | 1 | | | | |
| 0 | $P_2$ | 750,000 | | 1 | | | | | | 1 | | | | | |
| 0 | $P_3$ | 750,000 | | | 1 | | | | | | 1 | | | | |
| -M | $P_4$ | 0 | | | | 1 | | | | -1/4 | | 1 | | | |
| -M | $P_5$ | 0 | | | | | 1 | | | -3/4 | | | 1 | | |
| -M | $P_6$ | 0 | | | | | | 1 | | | -1/4 | | | 1 | |
| -M | $P_7$ | 0 | | | | | | | 1 | | -3/4 | | | | 1 |

Where:

$P_1$ = Hire of milling service
$P_2$ = Non-use of Plant A capacity
$P_3$ = Non-use of Plant B capacity
$P_4$ = "Artificial" SOM delivered to A
$P_5$ = "Artificial" Corn delivered to A
$P_6$ = "Artificial" SOM delivered to B
$P_7$ = "Artificial" Corn delivered to B
$P_8$ = Milling in A and delivery to C
$P_9$ = Milling in B and delivery to C
$P_{10}$ = SOM from D to A
$P_{11}$ = Corn from E to A
$P_{12}$ = SOM from D to B
$P_{13}$ = Corn from E to B
-M = A cost so high that process will be forced from solution

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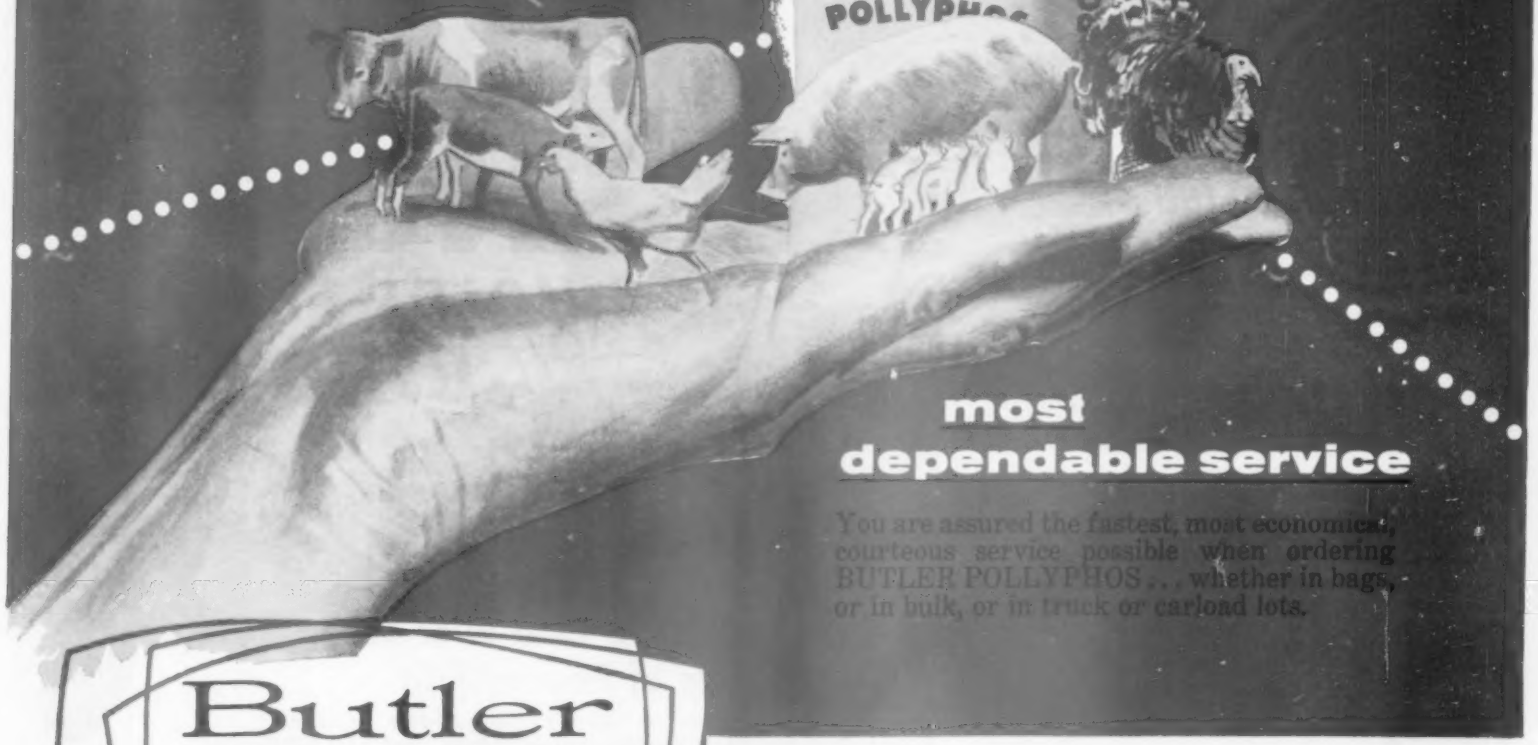
Butler Chemical Company offers feed and mineral manufacturers a high quality defluorinated phosphate with a phosphorus content of 19% . . . a minimum 92% — maximum 95% calcium content and no more than .19% fluorine.

### proven high quality

POLLYPHOS has been tested for biological availability . . . proven to be a highly available source of phosphorus. The Texture . . . the blending characteristics . . . of POLLYPHOS . . . make this product a most desirable source of phosphorus supplement for . . . use in formulating all types of livestock and poultry feeds.

### low delivered cost . . . .

Butler Chemical Company offers you . . . POLLYPHOS . . . at a low delivered cost per unit of phosphorus to feed and mineral manufacturers located in the western half of the United States.



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4. Fifty ingredients available from

BALTIMORE, MARYLAND



# GRAN-I-GRIT'S

## New Grit Feeding Program Has Definitely Proven that Broiler Growers and Egg Producers Can Make More Money from Feed Without Adding One Cent to their Costs

It's IMPORTANT NEWS to Broiler Growers and Egg Producers when, by not adding one cent to their costs, they can increase their profits.

Results from GRAN-I-GRIT'S New Grit Feeding Program have definitely proven that this is exactly what Broiler Growers and Egg Producers can do if they feed larger sizes of GRAN-I-GRIT.

Larger sizes of GRAN-I-GRIT not only grind feed finer and more efficiently but they also keep the digestive tract open for full feed utilization by completely grinding feathers and fibrous litter that all birds eat.

Small grit that passes through the digestive tract, rather than staying and working in the gizzard, takes space needed for feed.

By informing your customers of GRAN-I-GRIT'S New Grit Feeding Program you can show them how to make more money from your feed, which in turn will stimulate your sales.

Mr. Gurney C. Hodges, top broiler producer of Low Gap, North Carolina, states:

## Using a side by side test—Mr. Gurney Hodges made an EXTRA $125.85 on 4,000 Broilers

"I doubted the value of grit for broilers until I was persuaded recently to make a comparative test. The amazing results which I obtained are listed in adjoining column. I followed GRAN-I-GRIT'S recommendation and fed chick size grit for one week, growing size grit for the next two weeks, broiler size grit for the next three weeks and hen size grit until sold. The birds consumed 180 lbs. of chick growing size grit and 450 lbs. of broiler and hen size grit. I was well pleased that feeding GRAN-I-GRIT made me $125.85 extra and believe that feeding the larger grit sizes was responsible for this outstanding result. I have used GRAN-I-GRIT on other broiler flocks with equally good results."

| | White Rocks Without Grit | White Rocks with GRAN-I-GRIT |
|---|---|---|
| No. Birds Started 2/2/56 | 4,000 | 4,000 |
| No. Birds Sold 4/10/56 | 3,854 | 3,824 |
| Percentage Livability | 96.35% | 95.6% |
| Age When Sold | 9 wks., 5 days | 9 wks., 5 days |
| Average Weight per Bird | 3.27 lbs. | 3.479 lbs. |
| Total Lbs. of Broilers Sold | 12,620 lbs. | 13,304 lbs. |
| Bags Broiler Chow Fed | 333 | 332 |
| Lbs. of Meat per 100 Lbs. Feed | 37.89 | 40.07 |
| Lbs. of Feed per Lb. of Meat | 2.638 | 2.49 |
| Broiler Selling Price per Lb. | 19c | 19c |
| Receipts from Sale of Broilers | $2,397.80 | $2,527.76 |
| Total Cost Chicks, Feed, Sanitation | 2,359.07 | 2,353.73 |
| Labor Profit and Grit Cost | 38.73 | 174.03 |
| Cost of GRAN-I-GRIT 0 lbs. @ 1½c | 0 | 630 lbs. @ 1½c 9.45 |
| Labor Profit | 38.73 | 164.58 |
| Extra Profit from use of GRAN-I-GRIT | 0 | 125.85 |

*Get Full Details—*

## GRAN-I-GRIT'S *New* GRIT FEEDING Program

**Top poultrymen use GRAN-I-GRIT. They know from experience that GRAN-I-GRIT is the best profit producing grit they can use. GRAN-i-GRIT is insoluble . . . does not dissolve and cannot change the mineral balance of your feed.**

**We have a new GRAN-I-GRIT circular that gives full details of the New GRAN-I-GRIT program of feeding larger sizes of grit . . . the program that is proving so successful with both Broiler Growers and Egg Producers. Write today for a free copy.**

**GRAN-I-GRIT is packed in 10-lb. Easy to Stack, Self Feeding Packs that save valuable storage space, time and labor and in 25, 50 and 80-lb. multiwall paper bags.**

# GRAN-I-GRIT HOLDS THE BIRD'S EYE

## Selected 20 to One over other Types of Poultry Grit

Chicks, broilers, pullets or layers must consume the proper amount of grit to get maximum results from feed and GRIT MUST HAVE EYE APPEAL before poultry will eat it. Side by side tests on poultry farms and by leading poultry authorities have proven that poultry of all ages prefer a light gray grit with black specks . . . THE GRAN-I-GRIT TYPE . . . (as much as ten, fifteen, twenty to one) over grit of other colors.

NORTH CAROLINA GRANITE CORP., Mount Airy, North Carolina

Member of Granite Grit Institute of America

**THE GRIT WITH THE SHARPEST GRINDING EDGES EVER CUT**

practical reason. You could not afford to solve it!

I trust these two illustrative problems have served to show that there is some middle ground where the optimum degree of complexity of the problem statement can be found. Most any "transportation" type of problem can be made so complex that solution is impractical.

**Realistic Problem Statements:** It takes much more thought to develop a small transportation model than to develop a large one of the same problem. It is necessary to aggregate elements of the larger model into elements of the smaller. Deciding what elements to aggregate requires thought and judgment if the reduced model is to be useful.

To make specific what we mean, let us refer to the problem conditions for the last illustrative problem. By aggregation we may be able to reduce the number of milling points considered. Perhaps examination will show that one of the mills near the boundary of your trade area will always (or very likely) ship into the vicinity of a mill in the interior of your territory. You may then be able to combine the two mills into a milling unit. The cost function for this unit of two mills would recognize the direct transportation between the two parts of the unit.

The 200 points of consignment can surely be aggregated. By studying transportation patterns it will become apparent that some point between all sources and some consignment points can be used in place of the consignment points. The least-cost means of reaching this intermediate point will give the desired solution.

The same principle can be applied in aggregating ingredient sources. Here some intermediate point between several sources and all the mills may be used. Prices at the supply points can be adjusted for delivery to the intermediate point.

If no clear-cut intermediate points appear in the transportation network, you may need to assume that such a point exists and take the consequences of the error involved. This may be your only alternative to not setting the problem up at all.

In order to further simplify the model, the feeds may be aggregated by type. For example, you may assume that you produce only one dairy feed whose characteristics are a weighted average of all the dairy feeds you actually produce.

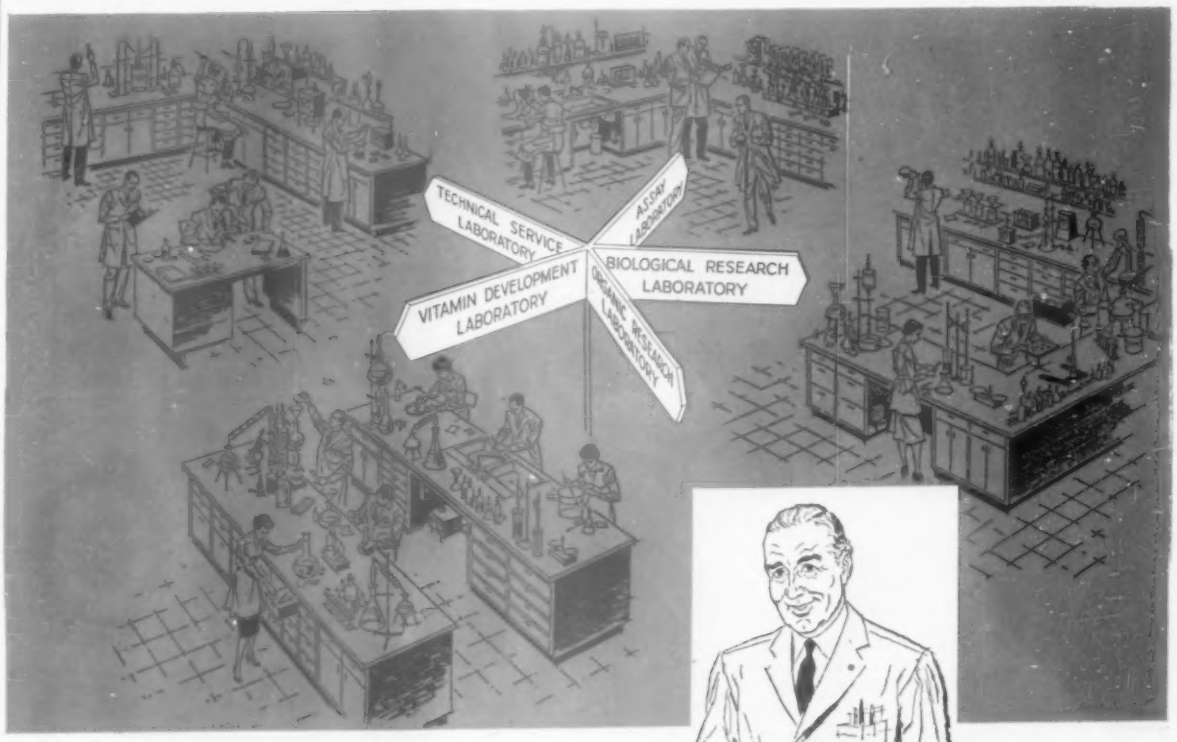
As you aggregate in this fashion, two things happen: first, the size of the problem is reduced (and the cost of solution also), and, secondly, you get fewer and less precise answers. At some degree of aggregation you will decide that the usefulness of the information lost by further aggregation is worth more than the saving you might realize by further reduction in problem size.

It is not feasible to reproduce the tabular form of a realistic "transportation" type problem statement. The simple model presented earlier employed all the innovations in format common to such problems.

**Planning New Plant Locations:** So far we have analyzed the problems of a firm with a given set of plants. One of the more interesting and useful uses of linear programming, however, is in the selection of plant site. If the size and character of the plant have already been decided, a trial-and-error method can be used in selecting one of finite (preferably small) number of sites. A model of the firm's problem is developed with the proposed new plant at a particular site. The net revenue for the firm with this location is then computed. The model is then changed only with respect to the site of the new plant. Another estimate of net revenue is obtained. You proceed in this way until all sites are explored. The site that gives the highest net revenue for the firm would be chosen, if other

## REPRINTS OF LINEAR PROGRAMMING ARTICLES AVAILABLE

**The series of seven Feedstuffs articles on linear programming by Dr. Robert F. Hutton will be reprinted in booklet form. Many nutritionists, management personnel and other feed men are expected to find the complete series valuable as the use of linear programming and electronic computers increases. The booklet will be available at a price of $1 per copy. Orders may be sent to the Reader Service Department, Feedstuffs, P.O. Box 67, Minneapolis 40, Minn. Payment should accompany the orders.**

*May we help you?*

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Nopco-Paks are skillfully blended high-quality ingredients including the superior Micratized® Vitamins A and D, formulated to your specifications.

Nopco-Paks are formulated by qualified nutritionists in Nopco's Technical Service Bureau. The bureau's efforts are actively supported by Nopco's Technical Service Laboratory, Vitamin Development Laboratory, Biological Research Laboratory, Organic Research Laboratory, and Assay Laboratory.

With this accumulation of nutritional know-how behind us, we do not have to make exaggerated claims for Nopco-Paks. Rather, we prefer to say: "May we help you work toward the ideal premixes for you—nutritionally and economically?"

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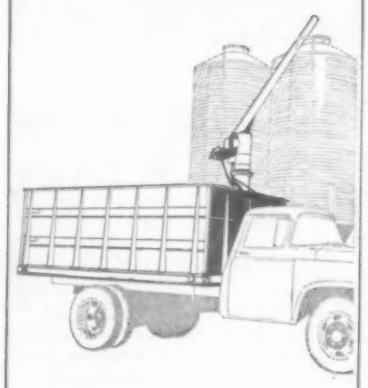

You'll be way out in front with this attractive new Simonsen High Delivery Combination Body on your truck. It's all steel, light weight — hauls more payload. Hauls bulk and sacks on the same trip — cuts delivery costs. Completely hydraulic, with fast front end delivery at 600 lbs. per minute and reaches 21 feet up. Order the size and compartment arrangement you need. Write now for full details on this custom built body by the number one name in bulk feed delivery equipment.

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## with the PAMCO BACK SAVER

**Attach this inexpensive AUGER UNIT to a grain box and you can handle any feed in bulk!**

- Ideal for hoist trucks
- Complete hydraulic operation
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- Will handle bulk feed grain or pellets
- Minimum breakage of pellets

Conversion units can be mounted on your present grain box.

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OTHER INSTALLATION POINTS: Englewood, Colo.; East Grand Forks, Minn.; Delphi, Indiana; Portland, Oregon; Jefferson, Georgia.


considerations did not influence the choice.

**Investment Planning:** The firm may not have made any definite plans as to precise character of the addition to capacity. There may be only a problem of limited capacity and a willingness on the part of management to make an investment of a given magnitude in capacity expansion. Many competing alternatives may be in the picture. New plants of various sizes at various locations, modernization of existing plants, expansion of existing plants, purchase of existing plants are all possibilities to be considered. These alternatives can be worked into a general model of the firm's operation together with the amount available for investment. Solution of the model will yield the best allocation of investment resources among the alternatives.

This discussion of optimum plant location and optimum investment planning presupposes knowledge upon prices and costs over the life of the plant or other investment. Obviously, some estimation is involved in choosing these data.

**Single Plant Operators:** We have to this point cut a very broad swath. None of our firms had less than two plants. What about the little guy? Of course, all that has been said here about the larger units applies to the single plant firm. If the firm gets small enough, however, the problem can be more fully comprehended by the mind of a single person. The central nervous system of the human is a remarkable analytical device that needs no assistance in many of our smaller problem situations. The large single plant operators would face the same set of problems essentially as the multiple plant operator.

What we have said in reference to mixing plants, of course, can be applied to multiple storage plants or other multiple facilities.

**Conclusion:** We hope to have introduced you to the potential of the "transportation" model of linear programming to assist with your operating and planning problems. Definitive discussion of techniques was not attempted; thus, you are encouraged to consult other references before attempting to set up your problems.

The complexity of the procedure may overcome you with despair of your use of the procedure. But, actually you are operating in an environment today that has all the complexity that needs to be built into the model. You are resolving these complexities by assuming they do not exist or by guess-and-by-gosh estimates of their effect. If linear programming can bring added information to bear on even a small part of your decisions, your management should be improved. Good luck!


**REFERENCES AND NOTES**

(1) Problems of plant location, optimum routing and bid evaluation are generally termed "transportation" problems, although they obviously extend beyond problems of material movement. A good general discussion of this problem area is to be found in Linear Programming and Economic Analysis by Dorfman, Samuelson and Solow, published by McGraw-Hill this year.

(2) The "stepping-stone" method is very straightforward. After you have worked a problem or so by this method you gain a better grasp of the process of linear programming. A good simple discussion of this method is to be found in Management Science, Vol. I, October, 1954. The article is "Stepping Stone Method of Explaining Linear Programming Calculations in Transportation Problems" by Charnes and Cooper.



# RUMEX

HELPS DAIRY AND BEEF CATTLE UTILIZE ROUGHAGE AT LOWER COST

The ORIGINAL dried RUMEN INOCULUM

## 4 important facts about Rumex

**(1) HELPS UTILIZE HIGH ROUGHAGE FEEDING**
Roughage is not always of uniform, high quality. Feeding RUMEX helps Dairy and Beef Cattle in correcting rumen dysfunction associated with poor appetite. RUMEX is an aid in preventing and treating many feeding problems.

**(2) EARLIER RUMINATION OF CALVES**
RUMEX helps calves start eating hay and grain at an earlier age. Helps initiate rumen functions and "cud-chewing" much sooner. Calves have greater resistance to certain diseases, are thriftier and develop quicker.

**(3) DAIRY AND BEEF CATTLE GO ON FULL FEED FASTER**
RUMEX helps cattle go from roughage to full feed faster. Helps prevent scours (non infectious). Aids greater feed efficiency and maintains animals on feed better.

**(4) SPONSORING GRANTS-IN-AID**
VITAMINS, INC. is sponsoring grants-in-aid to leading agricultural experiment stations for animal feeding studies and biochemistry research to aid in the greater knowledge of better ruminant nutrition. RUMEX should be part of your feeding program. Custom mixing is fast and easy. Consult us or our distributors for your recommended feeding levels of RUMEX. It means more profit for you and your customers. Write for the RUMEX PORTFOLIO, TODAY!

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IVAN SCANLAN & CO., 5605 LYNDALE AVE. ..., SOUTH, MINNEAPOLIS, MINN.
JOHN B. SIMPSON, YORKTOWN, TEXAS
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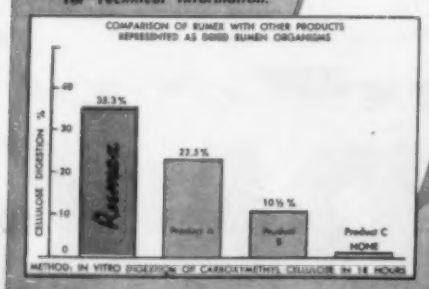


RUMEX BELONGS IN YOUR FEEDING PROGRAM . . . HELPS KEEP DAIRY COWS ON FULL MILK PRODUCTION . . . MAINTAINS CATTLE WEIGHT . . . MORE UNIFORM GAINS



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COLUMBIA PHOSPHATE CO. P PHOSPHATE PRODUCTS



# FEED HANDLING COSTS CUT with VIBRATORS

Feed men are finding they can materially cut operating costs by installing Cleveland Vibrators on bins, loading chutes, mixers and weighers.

When handled in gravity flow bins, grain tends to pack and bridge, stopping the flow and causing a needless waste of time. This plugging effect is worse when liquid fortifiers such as molasses are added.

The constant jiggling supplied by a Cleveland Vibrator keeps the feed in motion. There is no opportunity for the individual grains to stick to each other. Cleveland Vibrators eliminate plugging before it gets started.

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# YOU CAN PROVE TO YOURSELF

## *that no other birds top broilers based on Nichols 108s under commercial conditions*

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Ask us for test figures from growers in your area, or — better yet — let us help you set up a split-house test. A call or letter will bring our representative on the double.

### SPLIT-HOUSE TEST

| Maryland (Hatchery) | V108 | VX |
|---|---|---|
| Age when sold | 9 wks. 2 days | 9 wks. 2 days |
| Chicks started | 11,000 | 11,000 |
| Broilers sold | 10,442 | 10,444 |
| Average weight | 3.27 | 3.25 |
| Feed conversion | 2.33 | 2.46 |

(Both lots sold same day, September, 1958)

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NICHOLS

*Nichols Incorporated*

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BRED THRU NEW TECHNIQUES THAT PRODUCE

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- greater uniformity
- superior quality

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| LITTER | MULCHING |
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| Resilient — Fluffy | Keeps soil loose & loamy |
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Bulk or multiwall paper bags
Year round supply—cheap price
Sample and price on inquiry

The Arkansas Rice Growers Cooperative Association
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# CONVENTION CALENDAR

## New Listings

**For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.**

● ● ●

Dec. 3—Ontario Retail Feed Dealers Assn.; King Edward Sheraton Hotel, Toronto; sec., Murray H. McPhail, 60 Yonge St., Toronto 1, Ont., Canada.

Feb. 26—Illinois State Turkey Growers Assn.; Animal Sciences Laboratory, University of Illinois, Urbana, Ill.; sec., S. F. Ridlen, Poultry Extension Specialist.

● ● ●

Nov. 2-5 — National Renderers Assn., Hotel Statler, Washington, D.C.; sec., Miss Jamie C. Fox, 30 N. LaSalle St., Chicago 2, Ill.

Nov. 3-4 — National Swine Industry Conference; Purdue University, Lafayette, Ind.; chm. Keith E. Myers, P.O. Box 241, Grundy Center, Iowa.

Nov. 5—North Dakota Swine Day; Shepperd Arena, North Dakota Agricultural College, Fargo, N.D.

Nov. 5—Jersey Chick Assn.; Berkeley-Carteret Hotel, Asbury Park, N.J.; sec., J. C. Taylor, College of Agriculture, New Brunswick, N.J.

Nov. 5-6—Illinois Feed Assn. and Illinois Poultry Improvement Assn.; Armory, Springfield, Ill. (IFA Leland Hotel; sec., Dean M. Clark, Board of Trade, Chicago 4; IPIA, St. Nicholas Hotel; sec., Aubrey Harless, Box 91, Shelbyville, Ill.)

Nov. 7—Illinois Cattle Feeders Day; University of Illinois, Urbana; chm., Dr. George R. Johnson, Department of Animal Science.

Nov. 7 — Washington Animal Industry Conference; Lower Columbia Junior College, Longview, Wash.; sponsored by State College of Washington, Lower Columbia Junior College and Washington State Feed Assn.; assn. mgr., J. G. Wilson, 814 Second Ave. Bldg., Seattle 4, Wash.

Nov. 12-14 — Feed Production School; American Royal Bldg., Kansas City; sponsored by Midwest Feed Manufacturers Assn.; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 13-14—Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Prof. Charles Chance, Wing Hall, Cornell University, Ithaca, N.Y.

Nov. 14—Small Mill Short Course; American Royal Bldg., Kansas City; sponsored by Midwest Feed Manufacturers Assn., executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 15—Missouri Sheep Day; University of Missouri, Columbia; chm., C. V. Ross, Animal Husbandry Dept.

Nov. 20—Ohio Grain, Feed & Farm Supply Marketing Conference; Ohio State University, Columbus; chm., Dr. John Sharp, Department of Agricultural Economics.

Nov. 21—Rutgers School for Poultry Servicemen; Rutgers University, Brunswick, N.J.; chm., John Bezpa, Extension Specialist in Poultry Husbandry.

Nov. 23-25—Western Grain & Feed Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., Bob Skinner, 928 Des Moines Bldg., Des Moines, Iowa.

Nov. 28-29—American Society of Animal Production; Hotel Sherman, Chicago, Ill.; sec., H. H. Stonaker, Animal Husbandry Dept., Colorado State University, Fort Collins, Colo.

Nov. 30-Dec. 1 — Tennessee Feed Manufacturers Assn.; Noel Hotel, Nashville, Tenn.; sec., Charles H. Warfield, 602 American Trust Bldg., Nashville 3, Tenn.

Dec. 8-9 — Veterinarian-Nutrition Conference; President Hotel, Kansas City; sponsored by Midwest Feed Manufacturers Assn.; exec. vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City, Mo.

1959

Jan. 5-6 — Kansas Formula Feed Conference; Kansas State College, Manhattan, Kansas; chm., Dr. Tom Avery, Poultry Department.

Jan. 6-7—Elevator Business Managers Clinic, Michigan State University, Kellogg Center, East Lansing, Mich.; chm., Earl H. Brown.

Jan. 6-8—National Turkey Federation Convention and Exposition; Veterans Auditorium, Des Moines, Iowa; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 9-10 — Kansas Seed Dealers Assn.; Hotel Broadview, Wichita; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

Jan. 11-13—Northwest Retail Feed Assn.; Hotel Pick-Nicollet, Minneapolis; sec., W. D. Fleming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 18-20—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis 4, Ind.

Jan. 20-21—North Dakota Poultry Industries Convention; Elks Club, Fargo, N.D.; chm., B. J. Duke, North Dakota Poultry Improvement Board, Bismarck, N.D.

Jan. 26-28 — Southeastern Poultry & Egg Assn., Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Jan. 28-30—American Dehydrators Assn., Shamrock-Hilton Hotel, Houston; exec. vice pres., Joseph Chris-

K

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Fast, effective protection against hemorrhagic disease

Economical

Completely stable potency

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## CALENDAR FOR 1958-59

**NOVEMBER**

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**FEBRUARY**

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**APRIL**

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man, Board of Trade Bldg., Kansas City 5, Mo.

Jan. 29-30—Oregon Animal Industry Conference; Oregon State College, Corvallis; sponsored by Oregon State College and Oregon Feed & Seed Dealers Assn.; sec., Russ Hays, 702 Lewis Bldg., Portland, Ore.

Feb. 6-7—Minnesota Turkey Growers Assn.; Leamington Hotel, Minneapolis; sec., A. E. Eisenmenger, 2200 University Ave., St. Paul, Minn.

Feb. 9-10—Montana Nutrition Conference; Montana State College, Bozeman, Mont.; chm., Dr. O. O. Thomas, Animal Industry Dept.

Feb. 11-12 — Feed Mill Production School; Leopold Hotel, Bellingham, Wash.; sponsored by Washington State Feed Assn.; mgr., J. G. Wilson, 814 Second Avenue Bldg., Seattle, Wash.

Feb. 12-13 — Washington State Feed Assn.; Leopold Hotel, Bellingham; mgr., J. G. Wilson, 814 Second Avenue Bldg., Seattle, Wash.

Feb. 13-15—Institute of American Poultry Industries' Fact Finding Conference; Municipal Auditorium, Kansas City, Mo.; Institute of American Poultry Industries, 59 E. Madison, Chicago 2, Ill.

Feb. 16-18—Midwest Feed Manufacturers Assn., annual convention, Muehlebach Hotel, Kansas City, executive vice president, Lloyd Larson, 20 West Ninth St., Kansas City, Mo.

Feb. 22-24—Colorado Grain, Mill & Feed Dealers Assn.; Shirley Savoy Hotel, Denver, Colo.; sec., Olaf Erickson, 714 Cooper Bldg., Denver 2, Colo.

Feb. 23-26 — Colorado Livestock Days; Colorado State University, Ft. Collins, Colo.; chm., Dr. Lamar Esplin.

Feb. 24-25—Virginia Feed and Nutrition Conference; Hotel Roanoke, Roanoke, Va.; co-chm., Wm. G. Ritchie, J. S. Ritchie & Sons, Petersburg, Va., and Paul M. Reaves, professor Dairy Science, Virginia Polytechnic Institute, Blacksburg, Va.

March 1-3 — Ohio Grain & Feed Dealers Assn., Inc.; Neil House, Columbus, Ohio; sec., G. E. O'Brien, 710 N. Ohio Street, Greenville, Ohio.

March 19-20—Oregon Feed & Seed Dealers Association; Multnomah Hotel, Portland; sec., Russ Hays, 702 Lewis Bldg., Portland 4, Ore.

March 19-20—Maryland Nutrition Conference; Shoreham Hotel, Wash-


# AT LAST

**YOU CAN HAVE ACCURATE DOCKAGE PERCENTAGE**

***in one quick glance . . .***

ARMSTRONG PERCENTAGE AND DOCKAGE SCALE

. . . eliminates pencil work. Calculates percentages from weights of 250 to 500 grams. Fast and foolproof. Only one of its kind.

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It's a fact, the economies of our volume production coupled with the most modern milling facilities actually enable us to sell you pulverized oats for less than you can produce your own.

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are even higher in digestive enzymes based on latest experimental data. These products carry a number of Enzymes, including Proteolytic (action on proteins), Amylolytic: Zymase, Maltose and Invertase (action on starches, sugars and fiber), Catalytic, Lactic Ferments and others.

**These Active Factors Can Be Added to YOUR FEEDS At Little or No Extra Cost**

You will be hearing more and more about Enzymes in nutrition. Why not have them in your feeds now?

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Chillicothe Illinois

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**YEAST CULTURE**

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Digestive enzymes - B Vitamins including $B_{12}$ - Unidentified Health and Growth factors - Values not obtainable from any other source.

**For All Cattle, Hogs, Sheep, Chickens, Turkeys**

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Yeast Culture values proven by state college tests

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**BUY and SELL through WANT ADS**


March 25—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

April 2-4—Pacific Dairy & Poultry Assn.; Coronado, Cal.; sec., Carl E. Nall, 1304 E. 7th St., Los Angeles.

April 12-17—Grain Elevator & Processing Superintendents; Multnomah Hotel, Portland, Ore.; sec., Dean M. Clark, 1120 Board of Trade Bldg., Chicago 4, Ill.

April 30-May 2—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

May 8-10 — Grain Processing Machinery Manufacturers Assn.; Chicago; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

May 11-13—American Feed Manufacturers Assn. Convention and National Feed Industry Show; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 15-16—Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 7-9—Indiana Grain & Feed Dealers Association; Sheraton Hotel, French Lick, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 7-9 — Eastern Federation of Feed Merchants, Pocano Manor Inn, Pocano Manor, Pa.; sec., Austin W. Carpenter, Sherburne, N.Y.

July 10-14 — Georgia Feed Assn.; General Oglethorpe Hotel, Savannah, Ga.; sec., Will L. Kinard, 3240 Peachtree Rd. Bldg., Atlanta 5, Ga.

Sept. 13-14—Grain and Feed Dealers National Assn. (work meeting for directors, committees and members), Minneapolis; exec. v. pres., Alvin E. Oliver, 400 Folger Bldg., Washington 5, D.C.


Stanfordville, N. Y.

Wirthmore Feeds Inc.
Waltham, Mass.

Gentlemen:

I have been a consistent user of Wirthmore Feeds since 1953. The Wirthmore service representative in this area is unqualifiedly the finest serviceman of any I have ever met, and I have met most of them. I buy feed from Wirthmore Stores, Millerton, N. Y. The manager, Dick Tanner, and all the men who work there are fine fellows.

I like Wirthmore feeds, I like the Wirthmore service representative, I like the fellows at the Wirthmore store, I like you and your company.

Sincerely yours,

H. K. Hill

*Unsolicited letter from a Wirthmore customer*

**WIRTHMORE HAS WHAT IT TAKES TO MAKE FRIENDS FOR ITS DEALERS**

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WIRTHMORE POULTRY · DAIRY · STOCK FEEDS

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Wirthmore Feeds Inc., Waltham 54, Mass.


## Cyanamid Gives Grant For Drug Research

NEW YORK — The University of California school of veterinary medicine has accepted a grant-in-aid from American Cyanamid Co. to study the effect of the antibiotic Aureomycin chlortetracycline on several economically important diseases of sheep and cattle under irrigated and native pasture conditions, Cyanamid announces.

The studies, which will be under the supervision of Dr. Blaine McGowan, will stress efforts to control shipping fever, pneumonia of feeder lambs. The effectiveness of the antibiotic as a control of this common disease problem will be tested in pellet and injectible forms, and may also be incorporated with ground salt.

The research group also plans to determine whether Aureomycin fed at low levels in winter feed supplements will prevent pneumonia and scours of calves in high mountain areas.

Also included under the grant will be a basic study of the nature and cause of urinary calculi (bladder stones), a very important cause of losses in sheep. New drugs may eventually be available to cure or prevent this condition.

### BUYS HALF INTEREST

BEARDSLEY, MINN. — Floyd K. Johnson, Morris, Minn., has purchased half interest in the Beardsley Grain & Feed Co. Plans are to rebuild the mill and feed storage space destroyed by fire recently.


**FISH MEAL · FISH SOLUBLES**
LIVER MEAL—VITAMIN OILS
FEATHER MEAL—FEED INGREDIENTS
**ALBUMINA SUPPLY CO., INC.**
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**KEMITRACIN**

the purified ANTIBIOTIC complex—that does your feed antibiotic job better!

Send for complete scientific data.

**WHITMOYER LABORATORIES, Inc.**
MYERSTOWN, PENNA.

# Feed Dealer, Customer Benefit From Public Relations Program

## Better service to the community and the customer results in merchandising opportunities for aggressive retail feed firm

By Al P. Nelson
Feedstuffs Special Writer

How would you like to have the county agent as a judge in your annual corn show?

That's what happens at the annual Corn Show and Open House staged annually by the Nie Grain & Feed Co., Inc., Mechanicsville, Iowa. The show, now in its fifth year, is the idea of William Getty, manager of the firm. He is a director of the Western Grain & Feed Assn., and is also a vice president of that group. He believes that feed dealers, county agents, and others in agriculture can very well work together for the improvement of agriculture.

The annual Corn Show and Open House which Mr. Getty stages usually attracts several hundred farmers. There is a senior division and also a junior division, with adequate prizes for the best 10 ears of corn (any variety) in each division. In the open division, prizes are awarded for the longest ear of corn, the heaviest ear of corn and the tallest corn stalk. Mr. Getty reports that Howard A. Hamilton, Cedar County extension director, is very glad to act as judge.

And farmers like the show, too, one of the reasons being that they know the judge is impartial and judges according to merit.

### Suppliers Attend

At this fine merchandising event, there are movies and talks, and representatives of many of the suppliers are on hand to meet with farmers, talk to them about products and to pass out literature. It is an event at which farmers can learn a great deal about tried and also new products and gain information which will help them to farm more profitably.

Mr. Getty last year gave gifts to the first 200 persons who registered. In addition, there were free cheese, crackers, doughnuts, coffee or milk to all those attending. For those who made purchases, one pair of free husking gloves went to customers who bought a ton of feed or fertilizer, or a bushel of grass or corn seed.

"This is just about the only corn event of its kind in this region," states Mr. Getty, "and it gives us a chance to meet many farmers, and they can get a profitable day out of it, too, with the information they gain. Many customers tell us they like this Corn Day. We have a large metal storage shed which we clear out for the corn show."

### Hog Raising Center

Mr. Getty proudly points out that Mechanicsburg is known as the pork center of the world, and that much corn is raised in the region. Therefore the corn show and open house is made to order for the locality.

Last year Cedar County raised 274,057 hogs, said Mr. Getty. First place went to McHenry County, Ill., in 1957, but for many years Cedar County copped first place in number of hogs raised, and expects to do so again.

In fact, most business men in Mechanicsville have the following words printed on their checks, "World's Largest Hog Raising Area," and this is excellent publicity, reports Mr. Getty.

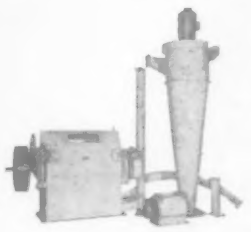
When it comes to cooperating with agricultural authorities, Mr. Getty does not stop with the county agent. He also works with the 4-H boys and girls who are members of a local high school vocational agriculture class. If the 4-H boys who are raising hogs will keep an accurate record of their hog feeding program and let him have the records, Mr. Getty allows these boys, with the approval of their instructor, a 10% discount on their feeds. Mr. Getty promises not to use the records turned in commercially, but only for reference.

He says that the 4-H members cooperate and both they and he have learned a great deal about hog production schedules, problems, etc., through such records. The 4-H members keep excellent records and compare them and also talk about these records in class.

### Youth Work Pays

"In fact, I think the 4-H members, for the most part, keep more accurate records on hog production than some of their elders," says Mr. Getty. "I enjoy having these members come into the office and talk about their projects. I can learn a lot from them, and I hope I also give them some worthwhile advice on feeds. They are the customers of tomorrow, and I

**GOOD PUBLIC RELATIONS PROGRAM—William Getty, general manager of the Nie Grain & Feed Co., Mechanicsville, Iowa, is shown at the corner of one of the four buildings owned by the firm. The company has developed a good public relations program that includes an annual open house and corn show, emphasis on 4-H projects, farm visits and a strong advertising program. Mr. Getty is a vice president of the Western Grain & Feed Assn. of Iowa.**

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**ROSS ALL-IN-ONE SYSTEM**

*provides packaged, matched components*

Available in a wide variety of sizes, this packaged unit is for steaming, crimping, grinding, flaking, cooling, and conveying. All parts are designed to function smoothly together.

*SHOWN ABOVE: 10x42 Rollerator & Air Conveying System*

In operation, crimped oats discharge directly to hopper built in roller mill and the Ross Vacuum Conveyor pulls them into piping and collector which acts as a cooler and conditioner. Material is then discharged to rotary air lock—and then to sacking bin. When used with Jet Steamer grain will leave rolls at about 200° F. and on leaving rotary air lock will be about 110° F., depending on type and amount of steam added—and outside temperature. Send for full details.

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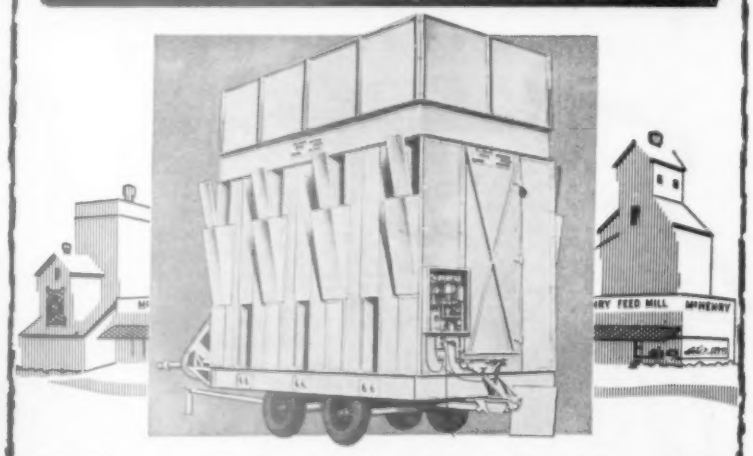
COMPARE! There's Nothing like it ANYWHERE!



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STANDARD AND HI-TYPE MODELS

Load and trim bulk materials up to 2" lump size into box cars and bins at a rate up to 90 T.P.H. Operator controls centrifugal thrower unit from outside car or bin, free from exposure to dust.

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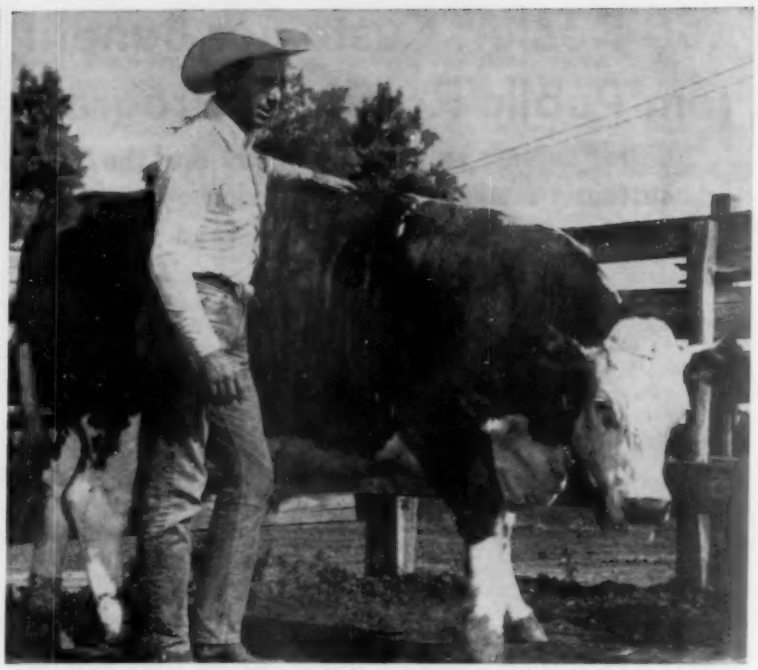


**FRESNO YARDS' BIGGEST STEER—Bevo Darden, manager of the Fresno (Cal.) Cattle Feeding Co., is shown with Tiny, a 2,100-lb. Hereford steer who had the distinction of being the largest steer ever fed out by the firm. He was received at a weight of 1,342 lb. and fed out for 229 days, giving him an average gain of 3¼ lb. daily. The average gain of a feeder is from 2¾ to 3 lb. Mr. Darden said the animal had the body and big bones required for a test to see how long a steer can be fed out without going back. But he said the fact that Tiny kept a paying rate of gain up over the one-ton mark came as something of a surprise. Tiny's ration consisted of over 40 lb. of mixed feed and concentrate daily, including 24 lb. of rolled barley and a considerable portion of cottonseed hulls. His ration also contained the additive Dynafac. When slaughtered, he graded prime with a 65% yield.**

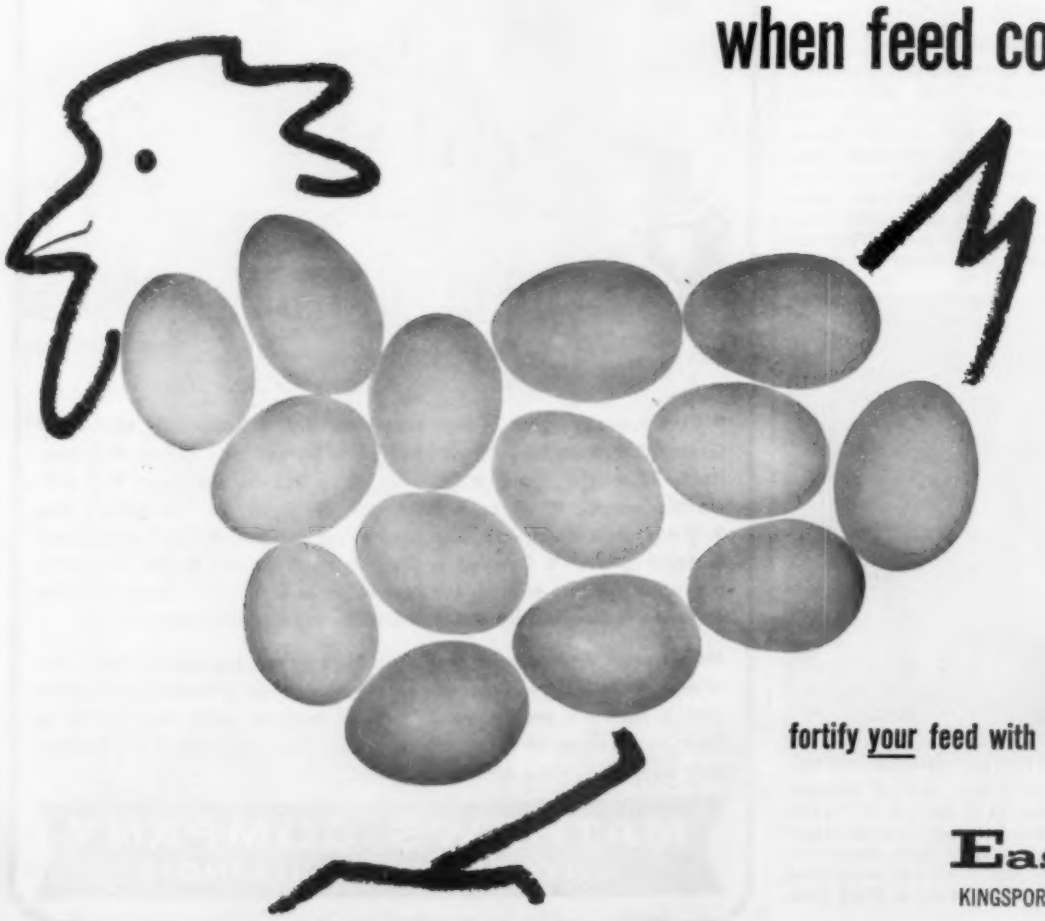
think it pays to work with these boys and girls."

In addition to contacting farmers through a corn show and open house, 4-H Club program and the like, Mr. Getty also advertises regularly in a local newspaper and also does considerable direct mail. He likes a program using a national ad mat service (Wayne Feed and Hubbard Milling Co. feeds) balanced with locally-slanted copy. In this way, he gets variety of ad appeal with greater reader interest.

This firm also makes its own line of Blue Ribbon Feeds. The largest percentage of business is on hog feeds, with beef cattle feed accounting for the next largest volume. Some poultry feed is also sold. Mr. Getty


layers seem to be made of eggs...

when feed contains Tecmangam



For productive, healthy flocks manganese is essential —and Tecmangam is an ideal source for this vital element.

Tecmangam contains 75-78% manganese sulphate in a completely soluble, readily assimilable form. It is easy to add to feed. Free-flowing, non-dusting, Tecmangam is a clean material to work with.

In addition, Tecmangam helps chicks remain free of perosis. Egg shell breakage is reduced. Hatchability is improved.

Provide an adequate level of manganese in your feed by adding one pound of Tecmangam to every ton.

fortify your feed with tecmangam
Eastman manganese sulphate

Eastman CHEMICAL PRODUCTS, INC.
KINGSPORT, TENNESSEE · Subsidiary of Eastman Kodak Company

reports that there is very little turkey raising in Cedar County, but in an adjacent county there is a heavy turkey production.

The mill can turn out one ton of feed every 15 minutes.

**Custom Milling**

The firm does considerable grinding and mixing, incorporating farmers' grains into the ration. If a farmer so desires, he can bring in his grain and the Nie firm will grind and mix and haul it back in bulk or in bags.

The Nie firm charges 15¢ for grinding and 5¢ for mixing. The firm has been using one bulk truck for delivery during the past four years. At the present time, 60% of its business is in bulk. Of that bulk volume, 97% of it is delivered direct into metal or wooden feeders on the farm, states Mr. Getty. The firm delivers every four days to some feeders.

"Fifty percent of our total volume is in our own feeds," says Mr. Getty. "The rest is custom mix."

Mr. Getty is watching the progress of pelleting very closely. The firm may add pelleting equipment at a later date. Concerning the future, Mr. Getty feels that the industry will probably see some faster and more economical type of making feeds, such as flaking or rolling, with molasses added.

**Former Feed Salesman**

This feed man is a former salesman for Hubbard Milling Co., and he has traveled extensively through the Midwest. He has observed the strong and weak points of many dealerships, he states, and is trying to put his practical experience to the best use at Mechanicsville.

When possible, Mr. Getty visits his customers, talking over their feed problems with them in detail. One farmer who has 220 acres reported to him that his outside labor cost is only $600 a year.

This low labor cost for so many acres is due to mechanization, said the farmer, plus the fact that the Nie firm makes and manufactures feed for him and delivers it in bulk right into the self feeders.

"We've got another customer who has 400 acres, and raises 100 beef cattle and 450 hogs," says Mr. Getty. "He has three hired men and gets four tons of feed from us every four days. If he did not get feed in bulk and put it into the feeders he'd probably have to have more men and equipment."

Working closely with customers, cognizant of their special feed needs and always ready to serve them, Nie Grain and Feed Co., Inc., is alert to its merchandising opportunities.

## Hooker Moves Offices For Phosphorus Sales

NEW YORK—The executive sales office of the phosphorus division of Hooker Chemical Corp. has been moved to the Lincoln Building, 60 E. 42nd St., New York, where it is located on the 30th floor with the firm's other New York offices.

John B. Sutliffe, general sales manager of the phosphorus division, made the announcement. He said corporate sales headquarters remain in Niagara Falls, N.Y.

The division's office was formerly located at 114 E. 40th St., which had been the executive headquarters of the former Shea Chemical Corp., now Hooker's phosphorus division.

Mr. Sutliffe also announced that W. Newell Wyatt has been named midwest sales manager, industrial chemicals, phosphorus division. Mr. Wyatt had been assistant director of sales-industrial chemicals for Shea.


No claims necessary!

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Each of these New Englander products can completely fortify the feeds you mix. Ocean-Fresh fishery products and other farm-proven ingredients give these Blends every essential vitamin, the highest quality protein, and a full measure of unknown growth factors—everything your feeds need to boost egg production and hatchability, to produce maximum feed efficiency in broilers and turkeys. The uniformity and potency of these complete Blends are guaranteed. You save money, to say nothing of mixing time and inventory space. So what are you waiting for? Drop a card to our distributor nearest you or write us direct for full details.

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Phone: Franklin 7-1522

L. E. "Robbie" Robertson
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Phone: Binghamton 2-7152

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Henry E. Kraus
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Phone: Harrisonburg 4-4848

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The Upjohn Company, Chemical Sales Division, Kalamazoo, Michigan

## Grain Processing Mills Decrease in California

SAN FRANCISCO—The number of grain processing mills in the Los Angeles area dropped from 87 to 80 between Dec. 31, 1956, and Dec. 31, 1957, reports the California State Department of Employment, and the total employees in these firms fell from an average of 3,250 to about 3,000 during the last three months of the respective years.

In the San Francisco-Oakland market the number of mills at the end of 1957 was 31, and the employees working in that market numbered about 1,600 during the fall period.

Companies producing such vegetable and animal oils and fats also dropped from 21 to 18 between the last dates of the two years in Los Angeles-Orange County market, but employment was almost steady, reflecting a small fractional decline from around 1,070 to about 1,050.

In the storeroom at the British camp, the sergeant and lieutenant in charge were debating what to do with the latest addition to their staff.

"Blimy if 'e ain't as thin as a ramrod," the sergeant complained. "Wot can 'e do here?"

"Let him clean the rifles," the lieutenant suggested.

"Clean the rifles!" shrilled the sergeant. "And 'oo's a-goin' to pull 'im through?"

◆ ◆ ◆

"I'm not going out with Bill any more. He knows too many naughty songs."

"Does he sing them to you?"

"Well, no . . . but he whistles them."

◆ ◆ ◆

Two friends met for the first time in years. "How are things?" one asked.

"I had a bad year last year," answered his friend. "My factory burned down, and I wasn't insured."

"That's too bad," the first man sympathized. "How is your wife?"

"Dead," came the unhappy reply. "Run over by a bus in December."

"I'm sorry to hear that. But how's the rest of the family?"

"My son got sent to jail."

"Gosh, that's tough." Then, desperately searching for a cheerful subject, "How are you doing yourself?"

"Great!" came the jovial answer. "Business is wonderful—I sell lucky charms, you know."

◆ ◆ ◆

The bride of only a few months was at the airport to meet her husband when he returned from abroad. They were waiting for his luggage when he pointed out a good-looking stewardess from the plane, Miss Tracy.

"How do you happen to know her name?" she asked.

He explained that it was listed, together with the names of the pilot and co-pilot, on the door of the cockpit.

"Dear," she asked, "what was the pilot's name?"

*Pure whey supplement for your feeds:*

KRACO

*The fresh-dried whole whey that's naturally sweet*

- no neutralizers added to upset milk mineral balance
- no fermentation to reduce high lactose content*

*Kraco is guaranteed at least 65% lactose—runs are usually between 70-72%

Kraco is made by Kraft—the country's largest producer of raw whey.

In processing this important feed supplement, Kraft uses the whey from low-acid cheese—and dries it within hours after it is drawn from the cheese vats.

For these two reasons, Kraco is *naturally* fresh, *naturally* sweet. Acid content is guaranteed at not more than 3.5%.

When you supplement your feeds with Kraco, you are using *pure* whey. Nothing has been added, nothing taken away.

Kraco contains all the whey nutrients, including the valuable whey factor, lactose (minimum 65%), milk protein (12%, mostly lactalbumin), milk minerals and B complex vitamins.

Ask the Kraft Man for full particulars.

KRACO *is a Kraft Product* / *Order from* KRAFT FOODS *Div. of National Dairy Products Corp.* 500 Peshtigo Court, Chicago 90, Illinois

- Stimulates appetite—adds aroma, taste appeal.
- Saves up to $4 ton in dairy feeds as a replacement for other anti-oxidant and flavor ingredients.
- Stabilizes fat-bearing nutrients—prevents rancid feed off-odors.
- Provides "high sweet" flavor for calf starters, beef and dairy feeds.

*Write for "taste-test" sample*

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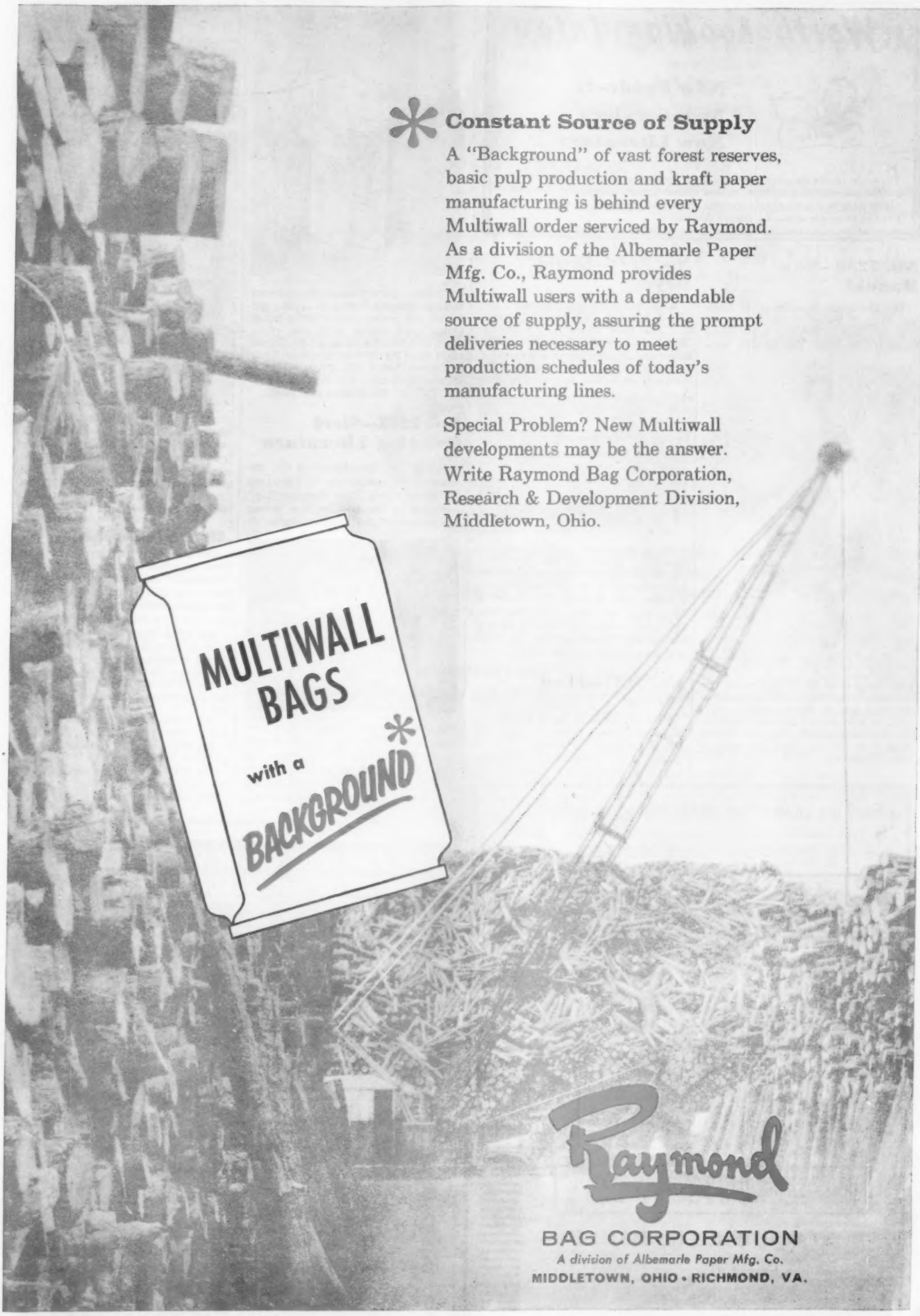


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A "Background" of vast forest reserves, basic pulp production and kraft paper manufacturing is behind every Multiwall order serviced by Raymond. As a division of the Albemarle Paper Mfg. Co., Raymond provides Multiwall users with a dependable source of supply, assuring the prompt deliveries necessary to meet production schedules of today's manufacturing lines.

Special Problem? New Multiwall developments may be the answer. Write Raymond Bag Corporation, Research & Development Division, Middletown, Ohio.

Raymond
BAG CORPORATION
*A division of Albemarle Paper Mfg. Co.*
MIDDLETOWN, OHIO • RICHMOND, VA.

# Worth Looking Into

**New Products**
**New Services**
**New Literature**

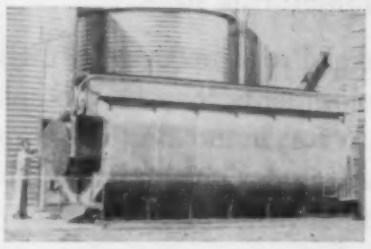
This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

## No. 7236—Bag Handle

The Multiwall department of Hudson Pulp & Paper Corp. announces a double side handle has been added to Multiwall bags. The handles support weights of 50 lb. and more, the company says. With the new handles the bag can be carried like a suitcase. It also makes for easy pouring, the company added. For more information, check No. 7236 and mail to this publication.

## No. 7241—Grain Dryer

A 750 bu. grain dryer designed and tested for fast, high-capacity operation has been added to the Behlen Manufacturing Co. dryer line. The dryer can be adapted to any elevator or commercial drying operation, the company says. The new unit is powered by electricity and heated by either LP or natural gas. The company's "H/A" efficiency principle has been adapted to the unit to eliminate possible heat damage. The dryer is 24 ft. long, has 9-in. augers and variable pitch 48-in. fan with a 40 h.p. motor. For details, check No. 7241 and mail to this publication.



## No. 7237—Feed Mixer

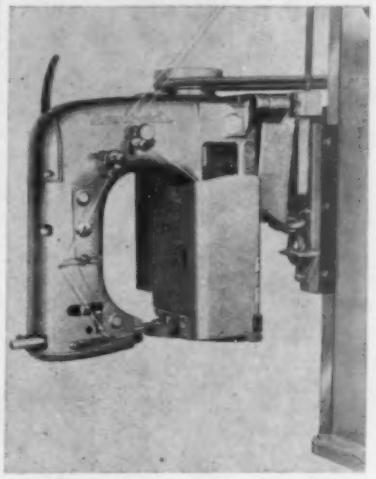
Now available is the new B & L "Cyclonic" Feed Mixer, a unit designed to blend all whole or ground grains, seeds, minerals and feed concentrates. Manufactured by Barnard & Leas Manufacturing Co., Inc., the mixers are constructed of extra heavy gauge steel coated with zinc chromate primer with an outer coating of alkid resin fortified with rubber. Four capacities, 700, 1,200, 3,000 and 4,000 lb. are available. For details, check No. 7237 on the coupon and mail.

## No. 7243—Steel Building Literature

The Butler Manufacturing Co. announces the availability of literature describing "New Steel Construction." Included in the booklet is a closer description of the building shown in the above picture. That building consists of 20 Butler square bolted steel tanks, 8 ft. by 8 ft. by 57 ft. high. The unit holds 60,000 bu. grain. For more information, check No. 7243 on the coupon and mail to this publication.

## No. 7239—High-Speed Sewing Head

Union Special Machine Co. announces a new high-speed sewing head, Style 53600 H, for closing medium and heavy weight bags made of burlap and single ply or multiwall paper. The machine incorporates a 25% speed increase over the previous machine used in that range, the company says. The unit has automatic lubrication and is adaptable for mounting on existing bag machine frames and columns. The machine can handle up to five-ply multiwall gusset type paper, the company says. Check No. 7239 on the coupon and mail for details.



## *Also Available*

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

**No. 7173**—Pig and poultry feed unit, J. B. Sedberry, Inc.

**No. 7174**—Industrial fan bulletin, Day Sales Co.

**No. 7175**—Packaged gas producing equipment, Southwest Industries, Inc.

**No. 7176**—Rental program for Tote bins, Tote System, Inc.

**No. 7177**—Poultry feed fortification product, Borden Co.

**No. 7178**—Automatic tubular water warmer, Smith-Gates Corp.

**No. 7179** — Handbook on copy

Send me information on the items marked:

☐ No. 7236—Bag Handle
☐ No. 7237—Feed Mixer
☐ No. 7239—High-Speed Sewing Head
☐ No. 7241—Grain Dryer
☐ No. 7243—Steel Building Literature

(PLEASE PRINT OR TYPE)

Others (list numbers) .....

NAME .....

COMPANY .....

ADDRESS .....

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MINNEAPOLIS, MINN.

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Reader Service Dept. Minneapolis 40, Minn.


NOW RUN YOUR GRAIN MOISTURES the IMPROVED more ACCURATE way!
with the
NEW SEEDBURO Steinlite
model 500 RC
MOISTURE TESTER

25 YEARS OF RESEARCH HAVE MADE THESE FEATURES POSSIBLE

1. NEW ROUND FUNNEL—handles larger (250 gram) sample—especially designed for whole grains—automatic funnel reset
2. EASY-TO-READ, built-in, eye-level thermometer.
3. LARGE 9 INCH METER gives automatic reading . . . no button to push, or dials to adjust. One scale for all moisture ranges.
4. NEW EASE OF OPERATION AND SPEED—balance tester and thereafter all that is necessary is to drop sample into test cell and obtain automatic meter reading at that time

Tests are equivalent to the basic standards of the U.S.D.A.

You'll have to put New Seedburo Steinlite 500 RC through its paces to find how easy and conveniently this improved model makes moisture tests on corn, wheat, oats, rice, soybeans, flax, rye and sorghums. You simply drop the larger more practical 250 gram sample into the test cell and read the meter. Full information and the famous Seedburo service is as near to you as your phone . . . Call ANdover 3-2128 Collect, or—

"See your Seedburo Representative"

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boards, Wagner Sign Service, Inc.

**No. 7180**—Bulk shipping container, Ohio Boxboard Co.

**No. 7181**—Steel buildings in color, Stran-Steel Corp.

**No. 7182**—Grain drying equipment catalog, Aeroglide Corp.

**No. 7183**—Broiler, layer coccidiostat, American Cyanamid Co.

**No. 7184**—Four-ton capacity bulk feed bin, Leach Manufacturing Co.

**No. 7185**—Automatic bag closure literature, Aeroglide Corp.

**No. 7186** — Automatic "tare-out" system, Richardson Scale Co.

**No. 7187**—Bulletin on pneumatic conveyor design, Sprout, Waldron & Co.

**No. 7188** — Modern farming film, Stran-Steel Corp.

**No. 7189** — Poultry vaccination booklet, Vineland Poultry Laboratories.

**No. 7190** — Feeding trial results brochure, Flavor Corporation of America.

**No. 7191** — Trough-belt conveyor, Universal Hoist Co.

**No. 7192**—Grain roller mill, W-W Grinder Corp.

**No. 7193**—Vacuum barrel handling unit, Vac-U-Lift Co.

**No. 7194**—Grain fumigator, Seedburo Equipment Co.

**No. 7195**—Bulk-bag feed body, Henderson Manufacturing Co.

**No. 7196** — Fourteen-hole laying nest, Oakes Manufacturing Co.

**No. 7197**—Peebles' 50-lb. red whey block, Western Condensing Co.

**No. 7198**—Bulk feed bins, Brock Manufacturing, Inc.

**No. 7199** — Ball bearing attrition mills, Munson Mill Machinery Co.

**No. 7200**—Fall promotion displays, American Cyanamid Co.

**No. 7201**—Poultry health product, Pabst Brewing Co.

**No. 7202**—Worm control brochures, Rhodia, Inc.

**No. 7203**—Poultry disease book, Dr. Salsbury's Laboratories.

**No. 7204**—New series of pellet mill dies, Sprout, Waldron & Co., Inc.

**No. 7205** — Spring materials handling truck, Everlevell Co.

**No. 7206**—Bulk feed handling report, Dorsey Trailers.

**No. 7207**—Seaweed feed additive, Algit, Inc.

**No. 7208**—Storage structure booklet, Sprout, Waldron & Co., Inc.

**No. 7209**—Feed blender with meter, Barnard & Leas Manufacturing Co., Inc.

**No. 7210**—Exhibit display, Federal Displays, Inc.

**No. 7211** — Range feeding cyclone attachment, Sprout, Waldron & Co., Inc.

**No. 7212** — Industrial fan bulletin, Day Co.

**No. 7213**—Mobile floor crane, Vanguard Engineering Co.

**No. 7214**—Magnetic drum separators, Eriez Manufacturing Co.

**No. 7215** — Injectable antibiotics, Merck & Co., Inc.

**No. 7216** — Grain fumigant literature, The Dow Chemical Co.

**No. 2053**—New bag concept, Bemis Bro. Bag Co.

**No. 7218**—Case imprinting machine, Rotary Imprinters, Inc.

**No. 7219**—Formula changeover control system, Richardson Scale Co.

**No. 7220**—Packing or bagging scale, Thayer Scale Corp.

**No. 7221**—Grain conveyor literature, Vac-U-Vator, division of Dunbar Kapple, Inc.

**No. 7222**—Corn grader technical bulletin, Sprout, Waldron & Co., Inc.

**No. 7223** — Automatic self-feeder for hogs, Baughman Manufacturing Co.

**No. 7225**—Conveyor trough, Screw Conveyor Corp.

**No. 7226**—Portable feed mixer, Green Isle Manufacturing Co.

**No. 7227**—Animal health product, the Dow Chemical Co.

**No. 7228**—Used lift truck buying and trading service, Clark Equipment Co.

**No. 7229**—Liquid tote tanks, Tote System, Inc.

**No. 7230**—Weighing and filling machine, Richardson Scale Co.

**No. 7231**—Portable crop dryer, the Mathews Co.


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F. H. Peavey & Co.
GRAIN SOYBEANS FLAX
Founded 1852
MINNEAPOLIS Pv DULUTH

A. E. BAXTER ENGINEERING CO.
*Designers and Engineers for Mills, Elevators and Feed Mills*
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- Progressive nutritional research
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The often-dramatic new developments of science hold the answers to many of your practical problems. Yet, most feed nutritionists and manufacturers simply do not have the time and facilities to test and evaluate all these discoveries for themselves. Today, Peter Hand can greatly expand your testing program and expedite your evaluation of these new developments.

The Peter Hand Foundation acts as your clearing house on nutritional developments. We study and develop formulas and products for you, based on work at our own research farm and laboratory, and upon latest findings from universities. Current research results from all sources are evaluated by the Foundation staff. These developments are then further studied under practical conditions at our applied research farm.

Consider The Peter Hand Foundation as part of *your own* research program, ready to serve you today!

**Check the products that interest you and mail this coupon now. We will be happy to send you full information.**

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- ☐ Peter Hand FW-Premixes (Vitamins-Antibiotics-Unidentified Growth Factors)
- ☐ Peter Hand Proven Premixes (5 and 10 lb. batch size)
- ☐ Peter Hand Aqua Solva—Water Soluble Vitamins and Antibiotics
- ☐ P.H. Vitamin A
- ☐ P.H. Vitamin $D_2$
- ☐ P.H. Vitamin $D_3$
- ☐ P.H. Vitamin E
- ☐ P.H. Riboflavin
- ☐ P.H. Pantothenic Acid
- ☐ P.H. Choline Chloride
- ☐ P.H. Komplex K
- ☐ P.H. Vitamin $B_{12}$
- ☐ P.H. Pepsin
- ☐ P.H. Arsanilic Acid
- ☐ P.H. Procaine Penicillin
- ☐ P.H. Bacitracin
- ☐ B.H.T. (Koppers)
- ☐ Methionine (Du Pont)
- ☐ Lipamone (White Laboratories)
- ☐ Rumen Microorganisms (Natural and cultured)
- ☐ GP 101 with Multiferm (Unidentified Growth Factors)
- ☐ Custom Premixes (To your exacting specifications)

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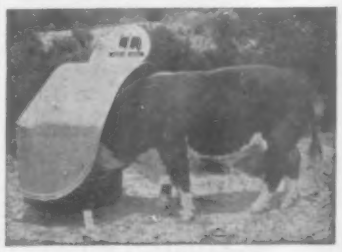
REPEAT CUSTOMERS PROVE . . . THE
WHIRLWIND FEEDER
DOES A BETTER JOB—LONGER!



For mineral and salt feeding. It's portable, durable—all steel corrosion-protected! For details regarding dealerships write . . .
COLLIER LIVESTOCK FEEDER CO.
BOX 896-G, RALLS, TEXAS

THE MIXER THAT MEETS EVERY MIXING REQUIREMENT...

THE Marion MIXER

WITH Exclusive MIXING AND BLENDING ACTION

MIXES DRY MATERIALS:
- Feeds
- Minerals & Vitamins
- Fertilizers, etc.

BLENDS DRY MATERIALS with LIQUID ADDITIVES:
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Absolute accuracy is assured through the exclusive Marion cross blending and mixing action. Even trace materials can be thoroughly and completely blended into your product. A constant uniformity, guaranteed---

Bag after Bag after Bag!

RAPIDS MACHINERY COMPANY
887 11th Street Marion, Iowa

SEND TODAY FOR FREE DESCRIPTIVE LITERATURE

## Changes, Challenges In Poultry Industry Topics of Conference

AMES, IOWA — Iowa producers and representatives of the poultry industry will discuss recent changes and new challenges in the industry at the first annual Poultry and Egg Day Conference at the Memorial Union at Iowa State College Nov. 6, it was announced.

Representatives of chicken, egg and turkey industries are being specially invited, Robert E. Phillips, head of the poultry department of Iowa State College, said. Anyone interested may attend.

Integration and mechanization will continue to cause major changes in all segments of the industry from producer to consumer, Prof. Phillips said. Poultry producers, hatchery and feed men, processors and marketing agencies must keep alert to these changes to keep their operations modern and competitively successful, Prof. Phillips pointed out.

Iowa State College poultrymen at the morning session will discuss changes and challenges confronting the industry. At the afternoon session Iowa State College poultry researchers will discuss the adoption of new approaches to poultry and egg research to meet these major industry changes.

Richard E. Lasher Robert H. Schaub

**SALES REPRESENTATIVES— Lasher & Schaub Associates has been appointed by the Munson Mill Machinery Co., Utica, N.Y., as an exclusive sales representative for the firm in the State of New York, except the metropolitan area, according to T. Alun Powell, Munson sales manager. Richard E. Lasher, a former Munson employee, was associated with the company starting as a draftsman in 1921. He served as a salesman, sales manager, chief engineer, and general manager until 1936. His associate, Robert H. Schaub, was graduated from Rensselaer Polytechnic Institute with the degree of Civil Engineer in 1935. He obtained his license from the State of New York as a professional engineer that same year.**

### TO INSTALL BINS

MANCHESTER, N.H.—The Unity Grist Mill, manufacturer of dairy and poultry feeds, plans to install bins at its location here. The firm has been granted a permit to cut holes in the floor and roof of the plant for the installation, according to the Manchester building department.

Shelley says

**Call anytime!** I'm always "in"

to anyone who wants to talk

Shellbuilder pure crushed reef

oyster shell. Put this in your

little black book – **CA 7-8191**

SHELLBUILDER COMPANY • MELROSE BUILDING • HOUSTON, TEXAS / *Territories open for qualified brokers.*

It's DANNEN for SOYBEAN OIL MEAL and

- Cottonseed Meal
- Linseed Meal
- Bran and Shorts
- Tankage
- Meat Scraps
- Other Feed Ingredients
- Grain—oats, corn, wheat, rye, barley, soybeans

DANNEN

DANNEN MILLS, INC.
Grain and Jobbing Division
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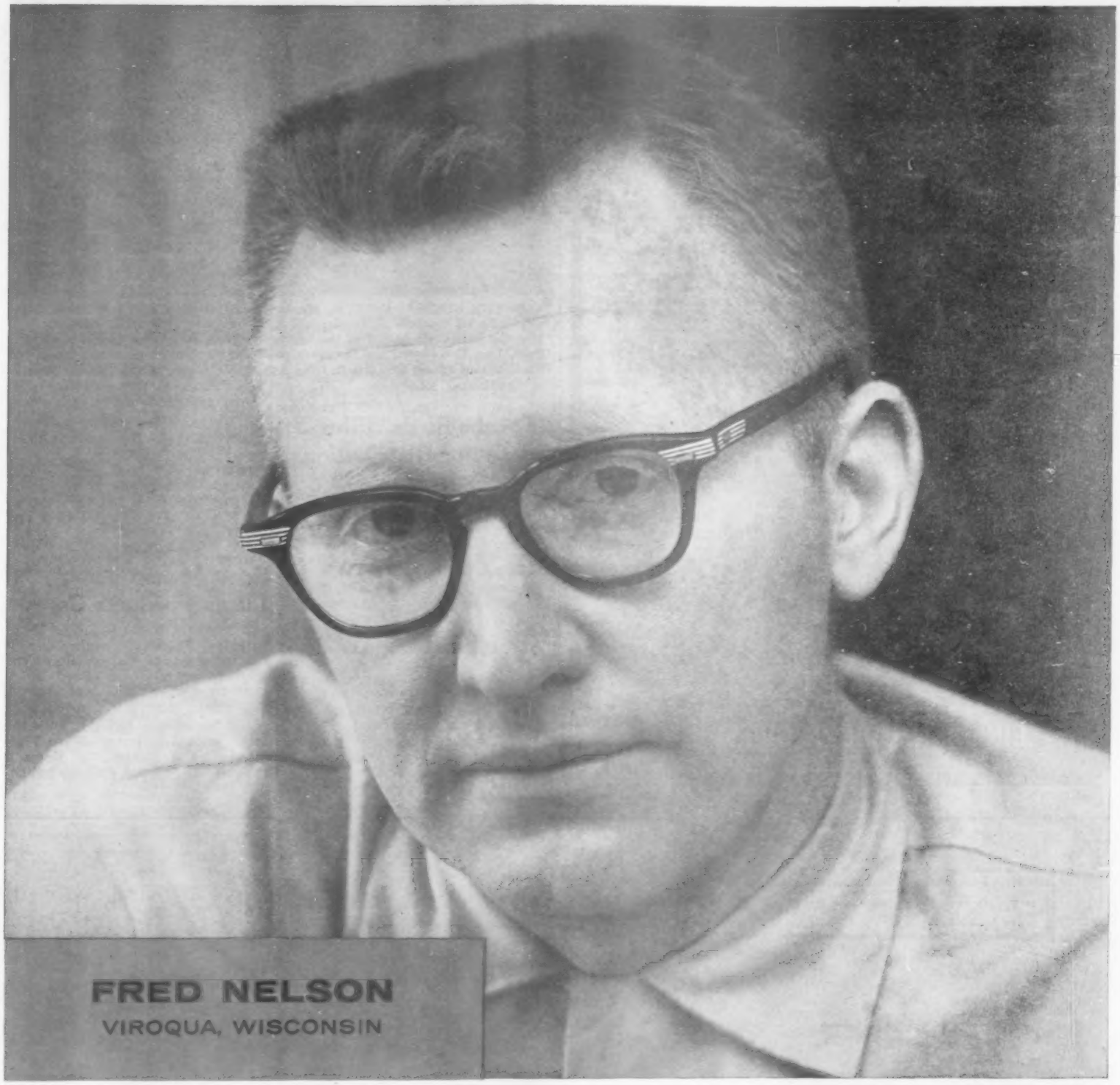


# *"Nearly half of my salt sales are Trace-Mineralized"*

"We have experienced a steady increase in Morton T-M Salt volume in the past two years," reports Mr. Nelson of Nelson Feed Mill & Elevator Company at Viroqua. From 45% to 50% of his total salt tonnage of 85 tons is now T-M Salt.

Mr. Nelson advises other dealers to expect further increases in *profitable* T-M business as more and more farmers switch from plain salt to T-M.

"It pays any dealer to sell his customers on using T-M instead of plain salt for livestock. We use trace-mineralized mixing salt in all our feed mixes and advocate the use of T-M Salt to all customers.

"It is my firm belief that farmers should feed trace-mineralized salt and from my experience I recommend Morton T-M. My customers can then be sure their animals get all the minerals so necessary for health and good feed conversion," states Mr. Nelson.

**Sell more Morton T-M for extra profit.** If you already handle Morton T-M Salt you can increase your business and your profit by following Mr. Nelson's example. If you don't handle Morton T-M Salt but would like to, just write to the Morton Salt Co., Chicago, Ill.

**BACKED BY STRONG ADVERTISING**

As a Morton dealer, your T-M sales effort is backed by consistent, down-to-earth advertising in leading farm and ranch publications. Radio sales messages also tell farmers and ranchers everywhere the benefits of using T-M Salt. Listen to the Alex Dreier radio show, "Topic for Today," every Saturday immediately following the "Farm and Home Hour."

# MORTON T-M SALT

BINGMAN'S *Animal Health Products*

**Less Mastitis — Higher Milk Production — More Profits**

**new approach to Herd Health**

**Results of tests using BINGMAN'S P-17**

During this test period herds were fed BINGMAN'S P-17, one tablespoonful morning and night, mixed in each cow's feed.*

| Herds Tested | FIRST TEST Quarters Tested | Clear | Infd. | SECOND TEST (in 60 days*) Quarters Tested | Clear | Infd. | Percent Cleared |
|---|---|---|---|---|---|---|---|
| A. | 32 | 21 | 11 | 28 | 28 | 0 | 100% |
| B. | 95 | 76 | 19 | 112 | 108 | 4 | 79% |
| C. | 80 | 34 | 46 | 68 | 55 | 13 | 72% |
| D. | 68 | 52 | 16 | 68 | 64 | 4 | 78% |
| E. | 74 | 38 | 36 | 79 | 72 | 7 | 81% |
| F. | 83 | 69 | 14 | 78 | 76 | 2 | 85% |
| G. | 60 | 34 | 26 | 44 | 39 | 5 | 81% |
| H. | 36 | 27 | 9 | 28 | 26 | 2 | 77% |
| I. | 16 | 11 | 5 | 16 | 15 | 1 | 80% |
| J. | 32 | 16 | 16 | 28 | 25 | 3 | 81% |
| K. | 48 | 41 | 7 | 60 | 59 | 1 | 86% |
| | 624 | 419 | 206 | 609 | 567 | 42 | 79.5% |

INDICATION OF SEVERITY OF INFECTION

| Degree | 1st Test | 2nd Test |
|---|---|---|
| Slight | 94 | 30 |
| Infected (Mastitis) | 66 | 9 |
| Chronic (Mastitis) | 45 | 3 |
| Total | 205 | 42 |

BINGMAN'S P-17

WHEN FED AS DIRECTED P-17

Aids in Control of MASTITIS

Aids in Reduction of SCOURS

Aids in Prevention or Treatment of FOOT ROT

Aids in Reduction of RESPIRATORY INFECTIONS

ASK ABOUT BINGMAN'S P-17 GUARANTEED FEEDING PROGRAM!

**BINGMAN LABORATORIES, INC.**

Subsidiary of S. A. H. LABORATORIES, Inc., CALDWELL, OHIO

Note: Sales representatives wanted in many good areas, write for details.

**"FOR THE BIRDS"—Dr. C. C. Murray, dean of the College of Agriculture, University of Georgia (second from left), accepts a print of the new film "For the Birds" on behalf of the university from Dr. A. L. Andrews, Hess & Clark, Inc. Also shown are the film's producer and director, Gerard Appy and Hill Bermont (third and fourth from left respectively) of the Georgia Center for Continuing Education.**

## "For the Birds" Film Ready for Distribution

MILWAUKEE—"For the Birds" is the title of a new 16 mm. sound movie recently completed by the Georgia Center for Continuing Education for Hess & Clark, Inc., Ashland, Ohio.

The poultry research film tells how and where a typical research project begins, laboratory and field-testing procedures, writing and presenting a report to a scientific group, and steps by which the results of research are put to work on the farm.

Featured actors in the film include Dr. C. C. Murray, dean of the Georgia College of Agriculture; Dr. Malcolm Reid, poultry parasitologist; Dr. Samuel C. Schmittle, director of the Georgia poultry disease research center, and others.

Gerard Appy, associate director of the Georgia center, was the executive producer and Hill Bermont was director.

Hess & Clark is making the film available without charge to any interested group. A free educational kit is also offered to teachers and youth group leaders.

## Scott Mason Joins Lucas Products Co.

BEDFORD, IOWA — Lucas Products Co., Bedford, manufacturer of feed supplements, has announced the appointment of Scott Mason to its sales division. The firm calls its products Feed Factors.

Mr. Mason was formerly with the retail sales department of the Firestone Tire & Rubber Co. He is a graduate of Simpson College, Indianola, Iowa.


Current Florida Citrus Pulp ad appearing in Eastern farm publications, total circulation 1,566,578.

How would you feed a BEST OF BREED?
Florida Citrus Pulp
THE SUNSHINE FEED FOR CATTLE
CITRUS PROCESSORS ASSOCIATION
P.O. BOX 1459 • WINTER HAVEN • FLORIDA • DEPT.

*How would You Sell...*

# THE BEST OF FEED?

**The *1,566,578 readers* who will see the above reprint are *your potential customers!* You don't have to sell Florida Citrus Pulp . . . It's *pre-sold for you!* Over 300,000 tons of Florida Citrus Pulp was sold during the 1957-58 season. Repeat sales stem from these advantages:**

- √ **High (74.9%) T.D.N. Content**
- √ **Proven Milk Stimulating Factors**
- √ **Year 'Round Availability**
- √ **Easy Storage, Handling and Feeding**
- √ **Contribution To Good Skeletal Development**

**Stock the PROVEN cattle feed that sells itself — FLORIDA CITRUS PULP. Write today for information about a profitable dealership.**

Florida Citrus Pulp — THE SUNSHINE FEED FOR CATTLE

CITRUS PROCESSORS ASSOCIATION

P.O. BOX 1459 • WINTER HAVEN • FLORIDA • DEPT. H

## Value of Reimplanting Stilbestrol Noted

NEW YORK—A second stilbestrol implant for beef cattle may be worth significantly more than the usual "one-shot" treatment, according to research data cited by Chas. Pfizer & Co., Inc., maker of the Stimplant pellets.

Animal scientists with agricultural experiment stations in Illinois, Wyoming and Oregon, Pfizer noted, have reported that steers first implanted on pasture generally do better if a second implant is made before the cattle go into the feedlot.

Based on their experience with reimplanting, University of Illinois investigators now advise feeders to buy previously-implanted steers, hormone-treated at least 150 days earlier, and implant again in the feedlot, the drug and chemical firm reports.

At the Dixon Springs Experiment Station in Illinois, steers implanted both on pasture and again in drylot gained while on feed at the rate of 3.25 lb. a day. Steers implanted on pastures but not in the feedlot gained 2.95 lb. a day while on feed.

Dr. Conrad J. Kercher, Wyoming animal nutritionist, discovered that steers in his tests, implanted twice—once on grass and again in the feedlot—gained faster than animals implanted only once on range.

Dr. D. C. England, animal husbandry department at Oregon, had similar success in Oregon trials. He found that weaning steers receiving two implantings of hormones at 70 to 90 day intervals do better than steers receiving only a single treatment. It was also noted at Oregon that animals implanted three times gained more rapidly than steers implanted twice.

"Pasture implanting, contrary to recent reports, has shown no significant effect on carcass grade or body conformation in beef cattle trials conducted by Illinois, Oklahoma and Wyoming researchers," Pfizer said.

"Stimplants, known for some time for their value in boosting rate of gain and improving feed efficiency in cattle being finished for market, were only recently found to have value for producing more pounds of beef on pasture."

## Arkansas Dairy Study Day Scheduled Dec. 1

FAYETTEVILLE, ARK. — The sixth annual Dairy Study Day is scheduled for Dec. 1 at the Agricultural Experiment Station of the University of Arkansas, according to Dr. John W. White, associate director of the station.

Latest research results at the station on quality forages, and on calf and heifer raising will be featured. The program begins at 10:30 a.m. in the Animal Science Building on the university campus. The meeting will adjourn about 3 p.m.


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## Delmarva Plan Aimed At Boosting Broiler Quality, Production

SALISBURY, MD. — Delmarva poultrymen have launched a year-long campaign aimed at boosting production and quality standards.

Spearheading the drive is a "Keep Delmarva Growing" committee, with members from each major segment of the peninsula's $180-million-a-year broiler business, as well as from agricultural colleges and state research stations. Chairman of the group is Edward H. Covell, Jr., Denton, Md., a broiler grower, feed man and Maryland vice president for the Delmarva Poultry Industry, Inc.

The goals of the effort are to step up broiler production efficiency; improve processing and marketing methods; streamline merchandising and promotional activities, and see to it that there is adequate financial backing to encourage desirable expansion and modernization of poultry buildings and equipment.

Sponsors of the campaign, in addition to the agricultural colleges and most poultry associations in Delmarva, include 271 commercial companies representing all phases of the industry.

"At the present low prices for broilers, and with a fierce struggle for markets coming up during the next year or so, Delmarva can only expand its 12% share of the national market by topping the market with quality birds," Mr. Covell said.

"Other areas can deliver birds to our big markets at a price the same as ours. So, our edge has to be quality. Quality starts in the broiler house."

He said that while stepped-up broiler house efficiency will be the first major effort of the program, the committee is already working on other steps which would involve processors, hatcheries, feed men and other suppliers.

## *Council Promotes Cafe Broiler Eating*

RICHMOND, VA. — The National Broiler Council has launched the broiler industry's first concentrated drive for greater sales through restaurants and institutions, officials of the organization announced.

Following a "recipe of the month" theme, the broiler sales promotion will feature a variety of cooking methods usable in the mass feeding trade, and the promotion will be backed at the restaurant level with menu clip-ons and table-tents in appealing full color, it was said.

The first advertisement featuring broilers in the recipe of the month theme is in the current issue of Restaurant Management, with a circulation of 33,000, according to Frank Frazier, executive vice president of the council.

The second important phase of this campaign will be launched in Institutions Magazine with a circulation of 41,000 in November.

The council considers the drive a major step in rounding out its program of broiler promotions, it was stated. About 25% of the money spent for food is spent in restaurants and institutions, Mr. Frazier noted.

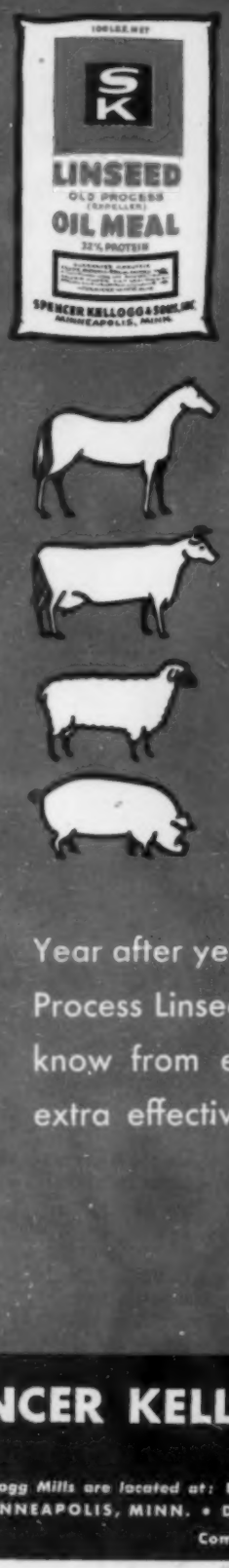
O. W. Eriksen

**EXECUTIVE SECRETARY — O. W. Eriksen is the new executive secretary of the Colorado Grain, Milling and Feed Dealers Assn., Denver. A graduate of the University of Michigan, he formerly worked in the hotel business in Michigan, Illinois, Wisconsin and Colorado. Del Ellis, Denver, is president of the organization.**

## A. E. Staley Announces Fall Sales Program

DECATUR, ILL.—The A. E. Staley Manufacturing Co., Decatur, is offering a $9.98 value tool kit premium for coupons from 40 bags of "Staley's" baby pig pellets, pig starter pellets or sow and gilt concentrate as part of the company's "fall feed fair," the firm announces.

Other features of the company's fall sales event include special money-saving contract bookings available to cattle feeders on 11 varieties of "Staley's" beef feeds, and a stamp premium prize plan for dealers on "Staley's" "Vitality" dog foods.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Complete — F.O.B. Plant

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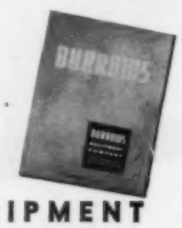


BURROWS EQUIPMENT COMPANY
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## NUTRITION

(Continued from page 16)

in reducing the parasite count during the earlier growing period but after the birds were mature reduction in the parasite count appears somewhat variable. It appears that the anthelmintic property of hygromycin may be greater for cecal worms than for round worms.

More experimental work is needed.

**POULTRY FEEDING PROGRAMS —Ben Wormeli, extension poultry husbandman, Texas A & M College:** There is need for uniformity in recommendations on basic management practices from various groups—college workers, county agents, feed people. And once we have agreed upon the correct practices, we must wipe out the incorrect practices that we know exist so that we can improve poultry production efficiency.

Good records are essential. Producers need to change their attitude toward record keeping. If they aren't able to keep adequate records themselves, they should hire an accounting service.

Mr. Wormeli listed recommended poultry facilities.

**FEEDING AND MANAGEMENT OF BREEDING TURKEYS—Dr. R. L. Atkinson, Texas A&M College:** The use of fats in turkey breeder feeds was investigated with fat being fed mature Broadbreasted Bronze hens just coming into production at the rate of 2½, 5, 7½, 10 and 12% fat.

There was an increase in egg production following the feeding of either 10 or 12½% animal fat which amounted to approximately 10% during the entire 120-day experimental period. Feed efficiency was improved in almost a direct proportion to the amount of fat added. It was calculated that by using the 12½% fat, there was a gain of $9.20 per hen in the laying period over the non-fat ration. Fat levels of 15% to 20% may be used in the future on the basis of these experiments.

High levels of fat tended to reduce the rate of body weight loss at least during the first 80 days of the 120-day experimental period. This would indicate that probably pausing in turkey laying hens is directly related to the loss in body weight and that if body weight can be maintained, pausing can be discouraged and a higher rate of production maintained.

In a study of a restricted feeding type of pullet rearing program for turkeys, the control group was fed a high energy feed containing 18% protein and highly fortified with vitamins and minerals. Groups 2, 3 and 4 were fed alfalfa stem meal, oat hulls and rice hulls, respectively, to supply 12% crude fiber.

The birds were fed ad libitum the first four weeks. They were allowed 0.5 lb. of feed per bird daily for the following two weeks and 0.6 lb. for the next four weeks. After 28 weeks of age, Group 1 was fed ad libitum and the other groups were allowed 0.55 lb. of feed per bird per day for six weeks. This level of intake maintained body weight.

A complete breeder mash was fed to all groups after the birds were 34 weeks of age, at which time the birds in Group 1 weighed approximately 3 lb. more than those in the restricted groups. The restricted feeding tended to delay sexual maturity from 7 to 14 days.

Groups 3 and 4 tended to lay fewer small eggs and fewer extra large eggs than did Groups 1 and 2, thus giving a much more uniform hatching egg.

**DEVELOPMENT AND EVALUATION OF COCCIDIOSTATS — Dr. Frederick Coulston, Sterling Winthrop Research Institute, Rensselaer, N.Y.:** The development of Trithiadol in this institute was natural since there is a basic similarity between malaria and coccidiosis and Sterling

"a NAME to DEPEND on
"an ORGANIZATION to serve you

FOXCO

- **GRAN-I-GRIT** Stretches feed. Faster growth. More eggs.
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- **EGGSHELL BRAND PURE REEF OYSTER SHELL** Clean, odorless. The industry's standard.
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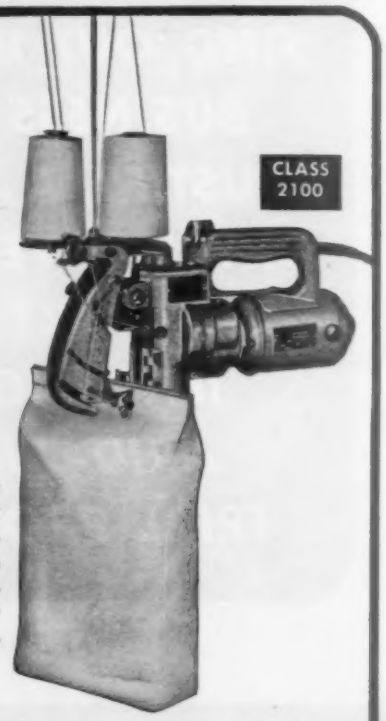
NEW! Portable Electric Bag Closing Machine




HERE is a handy little machine that makes bag closing fast, easy, and economical. It is recommended where operations are limited or intermittent and do not justify installation of large, high production machines.

- **LIGHTWEIGHT**—9½ pounds. Carry it anywhere. No installation; requires only an electrical outlet.
- **POWERFUL**—Exclusive top and bottom feed for greater power and production. Direct drive motor with thumb control button.
- **VERSATILE**—Closes bags made of cotton, burlap, jute, multi-wall paper, laminated paper. Produces two-thread stitch Type 401, or can be furnished to produce single-thread chain stitch Type 101.
- **SAFE**—Anyone can operate it. No special training required. Can be obtained with overhead suspension. Also, can be supplied with pedestal bracket. Send for descriptive literature.

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has done much of the work in developing anti-malarial drugs.

The oocysts that cause coccodiosis in poultry are present at all times. It is only when they get out of balance in the host do they actually cause lesions and what we know as coccidiosis.

It was reasoned that a new coccidiostat must approach an ideal — it must be active against fungi, bacteria and other parasites. We have already presented sufficient data to the Food & Drug Administration to permit us to make anthelmintic claims about Trithiadol, and we soon hope to be able to widen this to anti-fungal claims.

**UNIDENTIFIED FACTORS IN PRACTICAL NUTRITION—Dr. L. E. Carpenter, executive director, Distillers Feed Research Council, Cincinnati:** Many experiments have been conducted on the effect of sources of unknown factors under practical feeding conditions. In the case of poultry, most experimenters have shown that the addition of unidentified factor sources to practical diets produces a growth response. The response, although in most cases small, depends upon the kind and amount of dietary ingredients used and the environmental conditions. Generally, no response is obtained in birds growing at a rapid rate, indicating that optimum external and internal environmental conditions exist. In times of stress, however, most experimenters obtain the greatest response from these factors. A few tests show that in some cases the response can be attributed to the mineral constituents in the unidentified factor sources. Because we cannot measure the amount of unidentified factors in ingredients and do not know the requirements for these factors, the only sure way of supplying all the essential nutrients in formula feeds is to use at least one good source of each of the unidentified factors.

A limited number of experiments with swine show that the requirement for the unknown factors is highest for young pigs when the growth rate is rapid. The work from one experiment station suggests that distillers dried solubles and fish solubles contains a substance other than zinc that protects against parakeratosis. As in poultry, it is good practice to include sources of the unidentified factors in all swine feeds.

**UNIDENTIFIED GROWTH FACTORS—PRACTICAL APPLICATION —Dr. R. A. Rasmussen, Peter Hand Foundation, Chicago:** Unidentified factor searches have revealed different factors to different searchers. The

**THE BEST ROLLER MILL MADE**

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Cornell and Texas workers have changed a considerable proportion of the unidentified factors to identified minerals. It is the unidentified organic factors that need elucidation.

We have many feed ingredients other than corn and soy, and these ingredients will be fed. Corn-soy is setting the pace but we must learn how to secure equally efficient production from these other sources of animal feeds.

It is true that with better soybean meals, the corn-soy type rations do not always respond favorably to unidentified factor sources. There are too many times that we do secure responses to sources of unidentifed factors on practical rations for us to ignore their values.

The balance of evidence is for the existence of factors as yet unidentified. These factors should be added to practical rations in the form of their carriers. However, such "insurance" must be economical.

**NEW CONCEPTS IN SWINE NUTRITION—Dr. D. E. Becker, University of Illinois:** The low-feed saving value per acre of pasture makes the use of highly productive soils for hog pastures a questionable practice when alternative high-profit uses can be made of the land.

The most popular system of feeding growing-finishing pigs has been to self-feed an all-purpose supplement, free choice, with grain. However, experimental work supports the view that complete rations will play an increasingly important role.

On pasture, young pigs apparently gain more efficiently when fed a free-choice ration because they consume more forage.

In drylot growing-finishing pigs fed complete rations show a rate and efficiency of gain at least equal, and sometimes superior, to that of pigs fed free-choice.

In a drylot program, the cost advantage in feeding complete rations is doubtful. On pasture, the added rate and uniformity of gain will probably justify the cost of grinding and mixing.

Added advantages of a complete ration are automatic handling and better supplement intake control.

The value of pelleting depends on the fibrous portion of the feed. It is necessary to increase the feed efficiency by 6 to 10% to pay for the cost of pelleting.

Illinois workers have observed that nursing pigs ate feeds or mixtures containing molasses in greater quantity than the same preparations without molasses. Also, the addition of 10% corn sugar increased palatability.

In preference studies with creep fed pigs, a ration with 0.05% saccharin was clearly less palatable than creep rations with cane sugar. Actually the pigs selected only slightly more of a diet containing saccharin than of a diet without a sweetening agent.

Illinois workers have not been able to confirm the work of Iowa State in which they found that feeding thyroprotein to sows aids growth or livability of baby pigs suckling the sow.

**THE COST OF PRODUCING PORK—Dr. Fred Hale, Texas A&M College** (Dr. Hale outlined steps in calculating feed and other costs in producing hogs):

When hogs are selling for $18 cwt. and protein supplement can be bought for $5.50 cwt., a good hog producer who has good healthy hogs and gives them proper management can sell his farm grown grain for $3.07 cwt. Some swine producers can get better results than those given in the example—and many will get less.

**PROTEIN AND AMINO ACID NUTRITION OF SWINE—Dr. D. E. Becker, University of Illinois:** Feed

(Turn to NUTRITION, page 90)

**THE GRADE THAT GOES IN IS**
**THE GRADE THAT COMES OUT**

*You never have to worry about maintaining grade when you store grain in a Butler building.* For *this* famous flat storage structure—so strong it can withstand grain pressures without interior posts or brace rods, and so trustworthy it outsells all other grain buildings—is specifically engineered for safe grain storage.

Those who own Butler grain buildings will tell you that moisture, birds and vermin simply can't get in. The die-formed metal panels nest perfectly in place, are double-bolted to every purlin and girt. And where cover panels lap, weathersealing compound forms an absolute seal. This is why Butler buildings are tight and dry and stay that way. This is why, with ordinary care, the grade that goes in is the grade that comes out . . . of a Butler.

Butler Force-Aire grain conditioning equipment is another reason why grade is easy to maintain. It is specially designed and built for Butler buildings—and your Butler Builder knows what size equipment you need and how to install it properly. In fact, ask him for a copy of Butler's interesting grain storage booklet. Remember, your grain is worth far more than your building, so play it *safe*—buy a Butler. Look up your Butler Builder in the Yellow Pages of your phone book, or write us direct.

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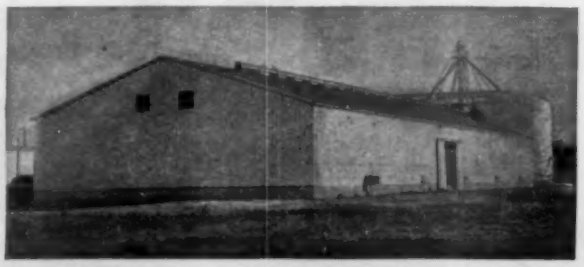
This 36-foot-wide Butler building in Minnesota provides safe storage for 22,000 bushels of shelled corn. No vermin, moisture gets in here!


Store any kind of grain in a Butler. This 70-foot-wide installation in Texas holds a quarter of a million bushels of milo.

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The V. D. ANDERSON COMPANY
Division of International Basic Economy Corporation
1900 West 96th Street, Cleveland 2, Ohio

# "Quaker's know-how in bulk feeds and concentrates is helping dealers make bigger profits in the changing feed picture,"

says **J. C. HUCKABEE,** *Feed Sales Manager of The Quaker Oats Company, in this report to Ful-O-Pep Feed Dealers*

*J. C. HUCKABEE joined The Quaker Oats Company in his native Texas and in 6 years was promoted to Feed Manager of the Division. "Huck's" remarkable sales ability and leadership advanced him rapidly to his present position as Manager of Quaker's entire Feed Sales.*

"As I see today's feed picture, it presents to feed dealers a fork in the road. Which route will you take?

"At this critical time, I am glad to report to you on what The Quaker Oats Company is doing to help Ful-O-Pep Dealers take the road that leads to new profit opportunities.

"Our company has carefully read the signs at the fork in the road. One sign pointing to bigger profits is BULK FEED. Quaker's leadership in bulk feeds is preparing Ful-O-Pep Dealers to attract the new kind of business developing in our changing farm economy. Quaker recognizes such facts as these:

"*Fewer feeders* mean small-order and bag business goes down. There was a 26% decline in the number of farms from 1920 to 1954. The number of feeders is estimated to be almost 30% smaller in 1965 compared with today.

"*Larger feeders* are developing due to the decline in numbers combined with increased demand for livestock products by our rapidly growing population.

"*Today's more specialized feeders* are cost-conscious feeders. And their business is going to the dealers who have the bulk feeds for more profitable feeding.

"I assure you that Ful-O-Pep Dealers are taking advantage of Quaker's know-how in bulk feeds. Already several of our plants are shipping half their feed in bulk. And the use of bulk feeds is increasing in all areas.

"Another sign pointing to the profit route is CONCENTRATES. And here, too, Ful-O-Pep Dealers are profiting from Quaker research and know-how.

"In today's battle against rising costs, feeders have to get more meat, more milk, more eggs from grain. To meet this challenge, Quaker has developed high-quality concentrates and hundreds of proven mixing formulas that are setting amazing new feed conversion records in practical on-the-farm feeding tests.

"Big feeders who need the lower-cost feeding provided by bulk feeds and concentrates are being drawn to Ful-O-Pep Dealers.

"The feed dealer who wants to move ahead with the times can find the aggressive leadership he needs in The Quaker Oats Company."

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# ☆ Classified Ads ☆

**Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday. Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $10.50 per column inch. All Want Ads cash with order.**

## MACHINERY WANTED

**ALL KINDS OF GOOD USED GRAIN** processing machinery. E. H. Beer & Co., Inc., Baltimore 2, Md.

**WANTED—USED PELLET MACHINE IN** good condition. Request full information. Address replies to Ad No. 4210, Feedstuffs, Minneapolis 40, Minn.

**WANTED TO BUY — RICHARDSON** scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

**ROTARY DRYER, DIRECT FIRED, 8 FT.** diameter, 30 ft. or longer. Also hammermill, 36 to 48 in. opening, complete with 100 to 150 H.P., 3-phase, 220-volt, 60-cycle, 1,800 R.P.M. motor and starter. Address Ad No. 4066, Feedstuffs, Minneapolis 40, Minn.

## MACHINERY FOR SALE

**WHIRLAWAY AIRBLAST CAR LOADERS,** cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P. O. Box 574, Jeffreson City, Mo.

**FOR SALE—ENCLOSED MOTORS; RICH**ardson Scales; truck scales; hammermills; oat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

**FEED MIXER, 1-TON CAPACITY, GUAR**anteed first-class throughout, 5 H.P. motor drive. Address Ad No. 3479, Feedstuffs, Minneapolis 40, Minn.

**CHAMPION MOBILE GRINDER AND** mixer units. Champion Portable Mill Co., 2106 Como Ave., Minneapolis 14, Minn.

**PELLET MILLS, 50 H.P. CALIFORNIA,** with coolers and crumbilizer; also Richardson Bagging Scales, animal fats tanks and molasses units. Ray Jones, Box 326, Benton, Ill.

**PNEUMATIC "AIR-CONVEYOR" SYSTEMS** —Vacuum and Hi-Pressure. Any size or product. Sell or lease, new or used. Also "Do-It-Ur-Self" Bulk Truck Kit, $1,495. Nolder Co., Box 14, Corona Del Mar, Cal.

**FOR SALE—1955 MODEL DAFFIN FORT**able feed mill mounted on two-ton Ford truck. Been used very little. Truck and mill in very good condition. Priced to sell. Terms. Taylor Feed Co., Albertville, Ala.

**FIVE USED S. HOWES NO. 2 CORN CUT**ters, in good condition. Also used knives (26 rotary and 29 bed). Three used S. Howes No. 1 corn cutters, in good condition. Also used knives (31 rotary and 50 bed). Located at our Albany, N. Y., plant. Open to any reasonable offer. Cooperative Grange League Federation Exchange, Inc., P. O. Box 973, Buffalo 5, N. Y.

**USED MOISTURE TESTERS BOUGHT AND SOLD**

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**FOR SALE—NEW AND RECONDITIONED** Richardson, Burrows, O K and Fairbanks bagging scales; Union Special, Minneapolis and Wilcox & Gibbs sewing heads; Whizzer bagging conveyors, bins, motors and mixers; also, engineering service. Winborns' Milling Equipment Service, Williamsburg, Iowa.

**SALE — ALUMINUM TANKS, 4,000 GAL.,** 2,100 gal.; Spiral Ribbon Mixers 200, 75 cu. ft.; Dewatering presses: Davenport No. 1A, No. 2A, No. 3A, Louisville 8-roll 36"; six Louisville Rotary Steam Tube Dryers 6'x60', 6'x30', 6'x25'; screw conveyor, trough belt conveyor, bucket elevator, bins, etc. Perry, 1403 N. 6th St., Philadelphia 22, Pa.

## HELP WANTED

**MIDWEST FEED MANUFACTURER HAS** opening for experienced sales manager. Salary open. Address Ad No. 4142, Feedstuffs, Minneapolis 40, Minn.

**SALES MANAGER WANTED FOR MID**west feed mill. Prefer recent college graduate with feed sales background. Excellent opportunity. Address replies to Ad No. 4227, Feedstuffs, Minneapolis 40, Minn.

**FEED MAN—SALES AND MANAGEMENT** experience. Specialty products. New enterprise. Share in profits. Location eastern Nebraska. Address Ad No. 4216, Feedstuffs, Minneapolis 40, Minn.

**EXCELLENT SIDE-LINE OR FULL TIME** item for salesman selling to feed, grain, farm equipment dealers and farmers. Liberal commissions. Replies will be held confidential. Write Doane Agricultural Service, Inc., St. Louis 3, Mo.

**MANUFACTURERS' REPRESENTATIVES** —For sensational new rat killer. Liberal commission rates. High rate of sales. Nothing like it on the market today. Address Ad No. 4225, Feedstuffs, Minneapolis 40, Minn.

**MEDIUM SIZE FEED PROCESSOR DE**sires high caliber salesman to sell feed ingredients in Southeast to feed mills. Permanent and excellent position. In reply state qualifications and income required to start. Address Ad No. 4209, Feedstuffs, Minneapolis 40, Minn.

**MANUFACTURER'S REPRESENTATIVE** wanted — Representative now calling on feed trade in Wisconsin, to represent manufacturer of mobile mills, either on full or part time basis. Compensation above average. Write to Ad No. 4218, Feedstuffs, Minneapolis 40, Minn.

**FEED SALESMAN WANTED FOR PROVEN** area—central Illinois—we have a man retiring and need a replacement. The territory is well established and company well known. Commission rate excellent—pay is superior—contact us now. Address Ad No. 3934, Feedstuffs, Minneapolis 40, Minn.

**FARM PRODUCTS DEPARTMENT OF** large corporation needs experienced animal health products salesman with following in retail feed trade in northern Indiana, Ohio, Illinois and southern Michigan. Salary plus travel expense. Give full details first letter. Address Ad No. 4223, Feedstuffs, Minneapolis 40, Minn.

**ENGINEER WANTED — AGGRESSIVE,** midwestern grain firm has opening for a young man with engineering experience to help plan installations and construction. Engineering degree and some operating experience either in elevator or flour mill desirable but not necessary. Salary commensurate with ability. A real opportunity to grow with an expanding company. Excellent retirement program. All replies confidential. Address Ad No. 4187, Feedstuffs, Minneapolis 40, Minn.

## SITUATIONS WANTED

**FEED PLANT ENGINEER — EXPERI**enced in construction, maintenance, production and management seeks position with sound, aggressive organization. Will relocate. Prefer Midwest or Pacific Northwest. Address Ad No. 4220, Feedstuffs, Minneapolis 40, Minn.

**ASSISTANT PLANT MANAGER — 12** years' experience all phases feed manufacture including audit, traffic management, formulation, plant production—desires opportunity to manage. Honesty, initiative, efficiency guaranteed. Address Ad No. 4221, Feedstuffs, Minneapolis 40, Minn.

**PRODUCTION EXECUTIVE — MANAGER** large feed manufacturing plant, administrator and coordinator, with ability to think and assume responsibility, seeks new position. Diversified background includes other lines and multiple plant experience. Well versed modern production techniques, labor relations, cost analysis, maintenance, personnel development, etc. Has ability to get along with people. Highly interested in end results. Address Ad No. 4223, Feedstuffs, Minneapolis 40, Minn.

## BUSINESS OPPORTUNITIES

**SALE OR LEASE—FEED WAREHOUSE,** 3,500 square feet, truck dock level. Location, Waseca, Minn., write Box 105.

**OLD ESTABLISHED FARM SUPPLY** store — Feed, roofing materials, paints, poultry and supplies, fertilizers. 4,500 sq. ft. floor space, $5,000 stock. Will sell stock, lease building. Brammer Feed Store, Shinnston, W. Va.

**FEED MILL — CALIFORNIA, ESTAB**lished many years. Must be sold due to ill health. Includes land, building and equipment for full operation. Price reduced to $75,500. Exy terms. Wigh-Gustafson Realty Co., 1515 Draper St., Kingsburg, Cal.

**COMPLETE MODERN EFFICIENT FEED** mill and warehouse for sale at sacrifice. Operated at $1,500,000 annual volume. Excellent transit privileges. Can pay itself off in 3 to 5 years. Will sell at a fraction of reproduction costs. Located in western New York State. For details and brochure contact Pierce & Cash, Inc., Realtors, Exclusive Agent, 21 Main St., Hamburg, N.Y.; EM 5680. Ask for Jerry O'Keefe.

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Halbert C. Smith Plymouth, Ind.

## MISCELLANEOUS

**BAGS FOR SALE—1,500 BURLAP BAGS** in A-1 condition, 15¢ each, f.o.b. Middleville. Contact Oscar Finkbeiner & Son, Middleville, Mich.

**SIMPLEX TIME CLOCK, TYPE B 3, MOD**el 787, $125; Marchant Calculator, Model B ADX, $350; Tag-Heppenstall Moisture Meter (2 rolls), $250; Steinlite Moisture Tester, Model S, $125. All very good condition. Baltimore Feed & Grain Co., 2341 Boston St., Baltimore 24, Md.

## NUTRITION

(Continued from page 88)

manufacturers should use the available knowledge of amino acids in formulating swine rations and supplements since it is possible to increase the efficiency of the rations.

Some proteins are the practical source of dietary amino acids. However, it has been demonstrated that various diets containing 18% protein (recommendation of National Research Council) are inadequate for proper amino acid nutrition of the weanling pig. On the other hand, certain diets containing only 12% protein, but properly balanced in amino acids, have been observed to support normal performance in growing pigs.

There is a substantial amount of data in work with the pig and chick to verify the principle that the required percentage of certain indispensable amino acids in the protein decreases in fairly direct fashion as the protein level increases.

**SWINE INTEGRATION — VIEWPOINT OF THE FEED MANUFACTURER — Maurice Johnson, Staley Milling Co., Kansas City:** The feed manufacturer who merchandises his feed is not eager to see swine integration enter the agricultural picture. However, he sees some economics in this type of an operation, such as lower sales cost, higher efficiency on the farm which leads to continuous business with the same customer, easier servicing situations and more opportunity to use the scientific feeding knowledge that is now available.

Risks involved from a feed manufacturer's standpoint are that the brand name importance will be diminished and competition will be increased.

It is evident, however, that some feed manufacturers will act as a catalyst in order to get the swine producer together with the processor to provide the kind of product the consumer needs. In some cases the processor will do this job. Therefore, many feed manufacturers feel compelled to enter this field. They enter it not by their own wish, but because of the compulsion imposed on them by the processor who is not inclined to purchase at market price much of the pork which is now being offered.

Some type of contractual production of pork is likely to increase the amount of commercial feed fed per hog in the U.S. because there is virtually no way to produce hogs on contract without using almost a 100% formula feed approach. That does not mean that the farmer will not and cannot use his own grains, but it means to produce a proper carcass on a proper schedule and within the efficiency limits imposed by the contractors, formula feed must be used in the proper way.

Pork production is probably not going to be expanded into void areas "voluntarily." Feed manufacturers who are interested in it possibly will be the ones who will cause it to develop.

Forces that are pushing for more integrated swine programs include: (1) Continuing demand for good pork at the consumer level. (2) Knowledge by the packers that unless improved pork is offered, grocers will not give it shelf space, leading to the willingness for packers to enter into contractual arrangements to get top products. (3) Influence of the college graduate who sees in contract feeding the chance to apply the scientific knowledge he has acquired. (4) The trend toward getting production closer to consuming centers; more easily done now with the expansion of feed grain production.

**SWINE INTEGRATION PROGRAM CONTRACTS—A. C. Magee, Texas A&M College:** It seems evident that we are moving toward larger, more intensive swine producing units which tend toward integration. Recent estimates indicate that already nearly a quarter of a million hogs are being fed out yearly on a contract basis.

Prof. Magee described the workings of the plans offered by Ralston Purina Co.; Nutrena Mills, Inc.; Staley Milling Co., and Foxbilt, Inc. In this connection, he noted that a few months ago it was said that more than 8,000 Purina pig parlors were in operation. That was a gain of 5,000 over a year earlier.

In Indiana, there is a farmer co-op that may make many changes in the state's hog farming program. This group, the Producer's Marketing Assn., Inc., of Indianapolis, proposes to produce feeder pigs in the southern part of Indiana for sale to a finish area in the northern part of the state.

In Iowa, farmers are considering a proposal to build their own processing plants. Farmers would sign three to five year contracts with the processing plant, agreeing to market their hogs through co-op owned facilities.

The meat packers have been concerned about the development of contract hog farming, but the major packers have been slow to offer contract plans.

Recently such a plan has been offered in Texas. The producer agrees to:

1. Maintain gilts, sows and boars suitable for producing meat-type hogs.

2. Follow the breeding, growing, care and feeding practices set forth in the plan of a particular feed manufacturer.

3. With the exception of herd replacements and breeding animals which may, under certain conditions, be sold otherwise, the producer agrees to sell to the "company" all hogs produced in accordance with the specified production plan.

4. Deliver market hogs, transportation prepaid, to the "company."

The packing company in turn agrees to:

1. Purchase all hogs produced in accordance with the specified production plan.

The agreement also spells out how hogs will be weighed and graded and specifies that the price paid the producer will be based on prices at the Ft. Worth market. For instance, hogs grading meat-type are to be purchased at a 75¢ cwt. premium above the high-low average for market hogs at the Ft. Worth Stock Yards on the day of delivery. On the other hand, hogs grading fat or over finished will be discounted 75¢ cwt.

**NEW ADDITIVES IN BEEF CATTLE RATIONS—Dr. C. F. Chappel, Eli Lilly & Co., Indianapolis:** The greatest thing that has happened in

the feeding of beef cattle during the past several years is the discovery that diethylstilbestrol, when incorporated in rations for beef cattle, stimulates gains and improves feed efficiency. Diethylstilbestrol is recommended for cattle that are to be fattened for market from the time they are approximately 400 lb. in weight until 48 hours prior to slaughter.

Several experiments from experimental stations and industrial research farms have indicated that the combination of diethylstilbestrol and the broad spectrum antibiotics is superior to feeding diethylstilbestrol alone. Several experiments have also been completed, however, indicating no improvement in gains from the addition of antibiotics to a ration that contains diethylstilbestrol. A summary of these experiments would indicate that feeding a combination may be most effective when fed to cattle during a feeding period of at least 120 days duration.

Lilly research over the past three-year period has demonstrated that feeding a ration containing both diethylstilbestrol and erythromycin to cattle in drylot increases feed efficiency above that obtained from a ration in which erythromycin was not included.

Burroughs and associates at the Iowa station have reported substantial increases in gains and improved feed efficiency when "Tapazole" (Methimazole, Lilly) was added to rations for cattle being fed in drylot. More research must be completed to determine whether or not these results can be repeated during longer feeding periods, and to determine the most economical level to feed. There is evidence that Tapazole may improve carcass grade.

In an experiment at the Montana agricultural experiment station calves receiving both Dynafac and diethylstilbestrol in a wintering type ration made larger gains than calves fed a ration containing diethylstilbestrol alone. In other college tests there apparently was no improvement in rates of gain when Dynafac was added to a fattening ration containing diethylstilbestrol.

Research on feeding tranquilizers to beef cattle is interesting. In an experiment at Purdue, feeding hydroxyzine at the rate of 2.50 mg. per head daily appeared to stimulate gains when fed in a high roughage fattening ration to steer calves. However, higher or lower levels of hydroxyzine, reserpine, or rauwolfia did not stimulate gains in this feeding trial.

**UNDERSTANDING MODERN AGRICULTURE—Dr. R. D. Lewis, director of the Texas Agricultural Experiment Station:** Agriculture's greatest need today is understanding among farmers, among those who provide services and materials to farmers, among those who transport, process and distribute products coming from farms and, above all, among the people who live in towns and cities who think they have no real concern in agriculture.

So-called farm problems presently confronting the food and fiber segments of the economy are far more than merely farming in scope. Such problems will have to be approached


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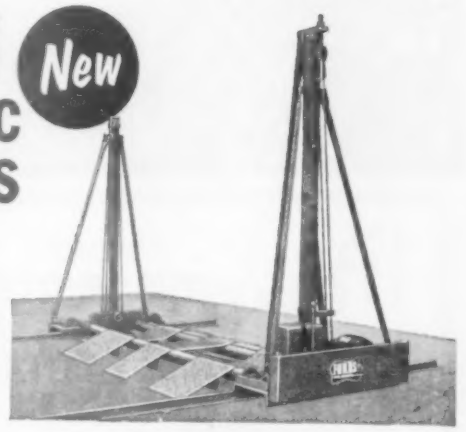

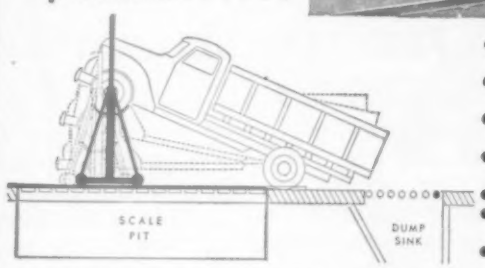



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from the perspective of the total agricultural industry and the nation as a whole rather than merely from the view of farming and ranching.

**CONDITIONS AFFECTING GRADE AND QUALITY OF STORED GRAIN—J. W. Sorenson, Jr., Texas A&M College:** Increased production of grain is pointing up the losses that often occur under improper storage conditions. Tests conducted by the Texas Agricultural Experiment Station and the U.S. Department of Agriculture show that many losses in stored grain can be prevented.

**ANTIBIOTIC POTENTIATION:** A special feature of the conference, added to the program at the last minute, was a panel discussion on terephthalic acid and other compounds and procedures for increasing the antibiotic blood level in poultry.

Moderated by Dr. J. H. Quisenberry, head of the department of poultry science at Texas A&M, the panel had as its participants: Dr. E. H. Peterson, University of Arkansas; Dr. W. P. Crawford, Chas. Pfizer & Co., Terre Haute, Ind.; Dr. William Williams, Lederle Laboratories Division, American Cyanamid Co., Pearl River, N.Y.; H. L. German, Texas Farm Products Co., Nacogdoches, Texas; J. D. Price, Texas Feed Control Service.

The area of potentiation of antibiotics in poultry was examined thoroughly. Terephthalic acid has been used experimentally to increase the antibiotic blood levels. This compound, it was pointed out, has not been approved by the Food & Drug Administration, nor by the Texas Feed Control Service for use as a feed additive.

Data were presented from the commercial laboratories represented, showing the amount of potentiation that may be obtained in the antibiotic blood level by adding terephthalic acid to the diet. There are no present data illustrating a beneficial effect on poultry from such antibiotic blood level increases.

This is a new field, and it stands to reason that an increase in the antibiotic blood level should have a favorable effect on the bird under certain conditions. These data remain to be collected experimentally.

The antibiotic level of the blood may also be increased by other compounds and by adjustments of calcium levels in calcium/phosphorus ratios in the feed formulas.

**"NEW HORIZONS":** Another speaker on the conference program was Lloyd S. Larson, executive vice president of the Midwest Feed Manufacturers Assn., Kansas City. He introduced "New Horizons," a half-hour sound film produced by MFMA on behalf of its members and as a salute to the entire feed industry.

## Kidneys OK in Poultry, USDA Tells Group

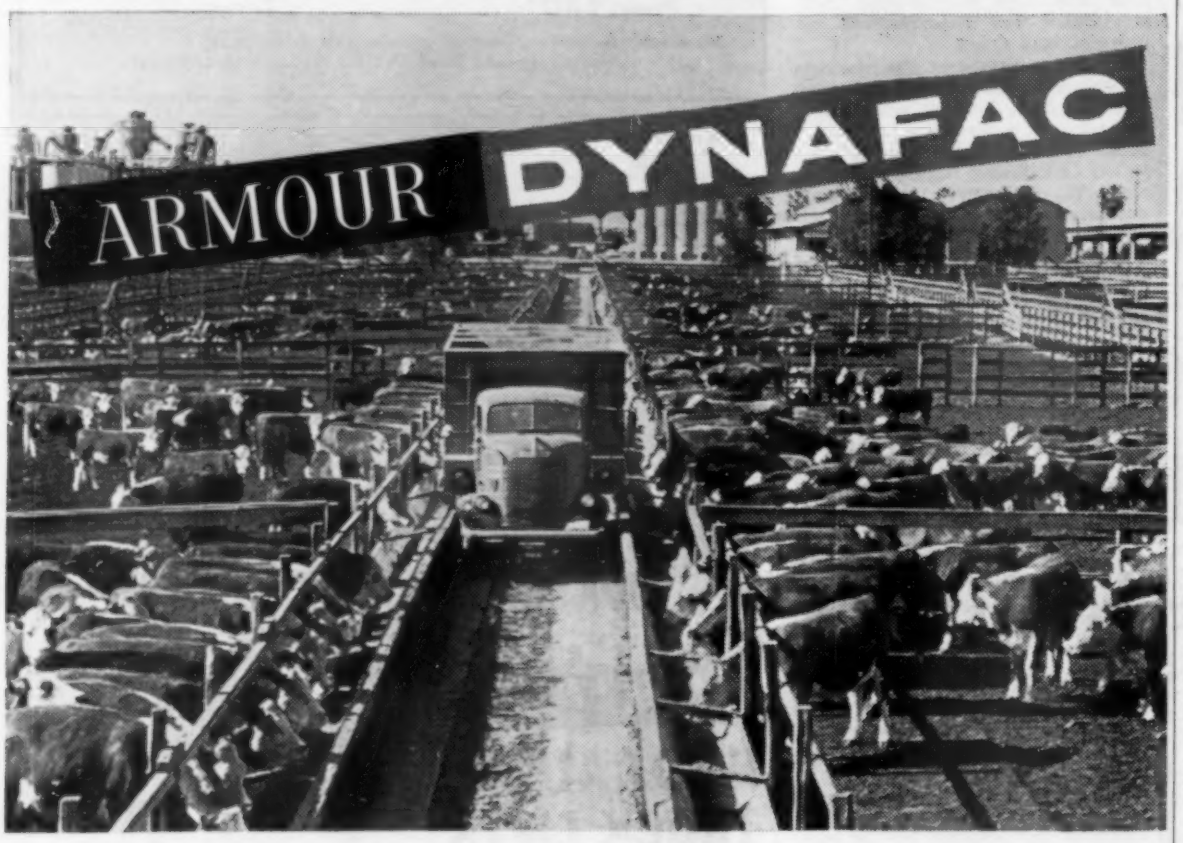
DECATUR, GA.—The U.S. Department of Agriculture has announced that a redefinition of ready-to-cook poultry has been written and that it will now permit wholesome kidneys to remain in the eviscerated bird. The announcement was made in the "Southeastern News Letter" of the Southeastern Poultry & Egg Assn.

The action comes after several months of debate between the poultry industry and the USDA and reverses previous regulations which required kidney removal, the news letter said.

According to the association, it and other poultry groups worked hard to bring about this change. The USDA personnel were praised for their cooperation and interest in the matter.

**ELEVATOR WORKER KILLED**

TAHOKA, TEXAS—Rescuers dug through tons of sorghum to find the body of Jake Thomas, 27, elevator employee trapped in the collapse of an elevator here.

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Dynafac costs less than a penny a head per day! Feeders tell us they get their best weight gains and feed conversion feeding this low-cost additive at the 2-gram-per-head-per-day level.

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**SPECIAL EXHIBIT FOR RENDERERS—A special feature of the National Renderers Assn. silver anniversary convention Nov. 3-5 at the Statler-Hilton Hotel in Washington will be an exhibit of several modern products and materials which use animal by-products, or their derivatives, in their manufacture. This picture shows research scientists selecting the products and materials for the exhibit. Left to right are Howard Gadberry, Midwest Research Institute, Kansas City; Dr. B. W. Beadle, Midwest Research Institute; Dr. Waldo C. Ault, U.S. Department of Agriculture Eastern Regional Laboratory, Philadelphia, and Dr. Leonard Gelb, senior fellow, National Renderers Assn., of the Eastern Regional Laboratory.**

## Program Plans Set For Illinois Cattle Feeders Day Nov. 7

URBANA, ILL.—A panel on high-moisture corn will be one of the highlights of the 30th annual Cattle Feeders Day to be held Nov. 7 at the University of Illinois here.

Included in the discussion will be the presentation of four phases of the high-moisture corn handling problem. LeRoy Toms, Dixon, Ill., will talk on high moisture ground ear corn in conventional silos. Paul Willrett, Malta, Ill., will discuss high moisture ground ear corn and shelled corn in the Harvestore, and the harvesting and storage of high moisture corn will be the topic of E. L. Hansen of the Illinois agricultural engineering department. Giving a progress report on the University of Illinois high-moisture corn experiments will be Dr. A. L. Neumann of the animal science department.

Planned for the day along with the afternoon panel is a tour of the beef cattle barns at 9 a.m. Persons making the tour will view four lots of yearling heifers on a shelled corn-silage test, calves on "all-in-one" alfalfa-corn silage, carcass tests of sire-progeny steers, four lots of finished steers off the reimplantation studies and other animals.

The morning speaking program gets under way at 11 a.m. in the auditorium. Research reports will be given on "Effect of Time of Hormone Implantation in Beef Steers" by Dr. G. E. Mitchell; "Pasture vs. Summer Silage for Full-Fed Steers" by Dr. W. W. Albert; a progress report on "all-in-one" silage studies by Dr. Neumann.

## Kansas Firm Approved For Tranquilizer Use

EMPORIA, KANSAS—The Teichgraeber Milling Co., Emporia, reported that it is the first cattle feed firm in the U.S. to add tranquilizers to its manufactured feed.

The company announcement said this is indicated in notification received by the firm from the Food & Drug Administration.

Nine supplements used in feed processed by the firm have been approved for addition of the tranquilizer. Feeding rate of the treated supplements will be 1 or 2 lb. a day, Teichgraeber officials said.

## Cooperative Egg Program Launched Officially in Mississippi

CANTON, MISS.—A large egg program was launched officially at Canton with the recent arrival of a shipment of 27,000 baby chicks.

The shipment was to Bill Gunter, one of five growers who are undertaking the pullet-production part of a multi-million dollar quality egg program under the auspices of the Mississippi Federated Cooperatives.

Co-op officials say it requires far less investment for the egg producers to buy their birds rather than to raise their own from chicks. The MFC contracts with the growers, at 1¢ per bird per week, to raise the chicks into pullets, which takes 14-18 weeks. The growers provide the houses and facilities, and the MFC furnishes chicks, feed and technical advice.

Pat Luckett, Jr., will raise 18,000 pullets, as will Coleman Norman and Robert Gregory. L. D. Wallace will handle 24,000 pullets.

The program is being brought into existence throughout the state through the leadership of MFC, the extension service and local civic leaders.

In Madison County, a co-op official said that grower applications are coming in well, but more are needed, as financial demands will naturally eliminate some.

In all the counties around Jackson, Miss., the local cocperative is pushing the quality egg program. Each county must have at least 25 producers, with 2,000 or more hens each, for the program to be a success, officials said.

Bankers and civic leaders say this is the "most promising agricultural development in Mississippi in many years." With just 2,000 hens a farmer can net $3,000 a year, they said.

Canton is now called the "Egg Capital of Mississippi" due to a stock-selling campaign through which Madison County people invested $75,000 in MFC stock to provide needed extra capital for the egg receiving and marketing center. The campaign ended in September.

Madison County will have 50 or more producers, with 2,000 or more hens each.

## OGILVIE

(Continued from page 4)

fore making a decision in regard to said offer."

It was announced that any shares offered up to the limit of 300,000 will be accepted without question but when that level is reached, further offers will not be binding on the purchaser.

Ogilvie has an authorized capitalization of 1 million shares, no par value, and 747,689 have been issued and remain outstanding.

Ogilvie common has been slowly rising in value during the year and has recently jumped from around $37 to the $45-46 range.

The trust company said that without disclosing figures it could be stated that the offer was going along "most satisfactorily."

Ogilvie officials said they did not know who was behind the bid for control. And National Trust Co. officials declined to reveal details about the identity of the purchaser.

### NEW FEED STORE

RIVERBANK, CAL.—A feed store handling dairy, hog, chicken and rabbit feed has been added to the Riverbank Locker Plant here. The store is located in the plant's main building.

### GRAIN MAN DIES

BLOOMINGTON, ILL. — Perry Medler, 61, Bloomington, who had been associated with the Farmers Grain Co., Covell, for 13 years, died recently following an extended illness.

## *ICC Action Makes Soybean Export Rate Reduction Effective*

MEMPHIS — The Interstate Commerce Commission, Washington, on Oct. 28 vacated the Division 2 suspension of application on reduced rates for export on soybeans. This vacation had the effect of making the reduced rates effective upon re-publication of the tariffs by the railroads on one day's notice.

It was expected that the lower rates would become effective for shipments made on or about Nov. 1.

Railroads, together with the grain shippers in the South, and farmers requested authority from the ICC to reduce rail rates on soybeans and grains to Gulf ports. The ICC granted the request for lower rates, but upon protest of river shippers and barge lines a suspension on the application of the reduced rates was imposed by Division 2 of the ICC.

On Oct. 28, the full commission rescinded the Division 2 order, thus allowing the reduced rates to become effective while the ICC continues to study the entire matter with a view to making the reduced rates permanent.

A hearing is currently scheduled for Nov. 19 in Memphis. However, it is expected that this date will be changed to some time in December or perhaps as late even as January, trade sources said.

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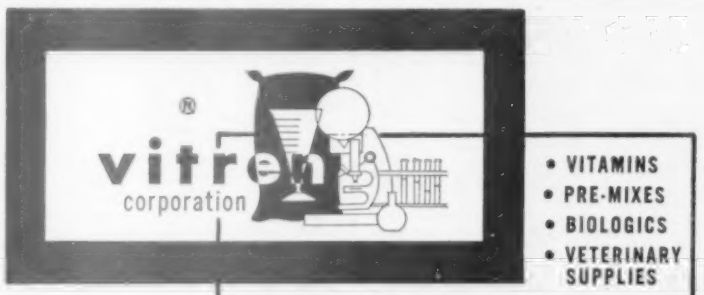


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# THE FEED MARKETS

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## Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

### A AND D FEEDING OIL

**Chicago:** Demand fair; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 7@8¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

**Denver:** Demand fair; trend steady; supply good; 2,250 A, 300 D 21¢ lb., Denver.

**Boston:** Demand light; supply good; 400 D, 3,000 A 20¢ lb.; 300 D, 3,000 A 19½¢; 300 D, 1,500 A 16½¢; 300 D, 2,250 A 18¢; 600 D, 1,500 A 17½¢; 300 D, 750 A 14½¢; 75 D, 750 A 14½¢.

**New York:** Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½@15½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢; f.o.b. Massachusetts, New York or Pennsylvania.

**Minneapolis:** 10,000 A 35¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 75 A 18½¢ lb.

### ALFALFA MEAL

**Portland:** Demand good; trend higher; supply ample; suncured, 15% $38; dehydrated, unchanged at $65.

**Philadelphia:** Demand slow; supply fair; 17% dehydrated $58.50.

**New Orleans:** Demand fair; trend unchanged; supply ample; $56@57; pellets $52@53.

**Cincinnati:** Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $59.50@61.50.

**Ft. Worth:** Demand good on dehydrated, poor on suncured; supply sufficient; 17% protein dehydrated $54, delivered Ft. Worth area, truck; Kansas dehydrated, 17%, 100,000 A $56.50, rail; suncured $39, truck.

**Memphis:** Demand fair; trend higher; supply scarce; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $49.

**Kansas City:** Demand continues constant and shows some enlargement this week compared with last; with practically all operations in Midwest completed, industry now drawing on stocks; prices strong, with indications that blenders will advance prices $2 next week; dehydrated alfalfa with 17% protein and 100,000 units of vitamin A guaranteed on arrival $48, sacked; reground pellets $48, sacked; oiled meal $50, sacked; bulk pellets $42@43; 15% protein, 125,000 A $52, sacked; suncured alfalfa demand slow with prices unchanged and supplies adequate to match demand; No. 1 fine ground $34@35, No. 1 ¼-in. $32@33, No. 2 ¼-in. $28.50@29.

**St. Louis:** Demand slow; trend steady; supply ample; 13% suncured, fine $40; 17% dehydrated, 100,000 units A $53.

**Chicago:** Demand fair; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $52.50@53; 13% No. 1 fine ground $42.

**Los Angeles:** Demand fair; trend steady; supply adequate; dehydrated meal, 17% protein, 100,000 A $49, bulk; dehydrated pellet meal, 17% protein, 100,000 A $51, bulk; suncured crumbles, 15% protein $43@44, bulk; suncured meal, 15% protein $41@42, bulk.

**Omaha:** Demand slow; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $43; sacked meal $48, Omaha basis.

**Denver:** Demand strong; trend up; supply ample; dehydrated $45.

**Seattle:** Demand fair; trend steady; supply good; 15% protein suncured $43, truck loads; 136,000 A unit dehydrated $69, truck loads.

**Boston:** Demand improved; supply adequate; dehydrated, 17% $60; suncured, 13% $48.

**Minneapolis:** Firm trend; fair demand; ample supply; reground pellets, 17% 100,000 A $51, bulk; oiled reground $53, bulk.

**Buffalo:** Demand fair; trend steady; supply adequate; $50.50, Boston.

### ANIMAL FAT (STABILIZED)

**Kansas City:** Demand fair; trend firmer; supply adequate; prime bleachable tallow 7¾¢ lb., tank cars.

**Chicago:** Demand good; supply short; bleachable fancy tallow, tank truck or carlots 7¼¢ lb.; yellow grease 7¼¢ lb.

**San Francisco:** Demand fair; supply ample; bleachable fancy 8¼¢ lb.; yellow grease 7¢ lb.

**Louisville:** Demand fair; trend very steady; supply good; bleachable fancy 7⅞¢ lb.; white tallow 8¼¢ lb.; yellow grease 6½¢ lb.

**New Orleans:** Demand slow; trend steady; supply adequate; 7⅛@8¢ lb., tank cars.

**Ft. Worth:** Demand fair; supply adequate; prime tallow, tank cars 7⅞¢ lb.; drums 9¾¢ lb., f.o.b. north Texas packing plants with returnable drums.

**St. Paul:** Feed demand only moderate, but price holds at 7¾¢ lb., f.o.b. producer's plant for bleachable fancy tallow as consumer demand continues extremely strong and export demand is moderate to heavy.

### BARLEY FEED

**Portland:** Demand good; supply ample; trend unchanged; rolled $62, ground $50.

**New Orleans:** Demand slow; trend unchanged; supply light; $59@60.

**Philadelphia:** Demand slow; supply fair; pulverized $44.75.

**Ogden:** Supply average; rolled $48@53; whole barley $40@45.

**Seattle:** Demand and supply good; trend steady; $50, bulk, truck lots.

**San Francisco:** Demand fair; supply ample; rolled $60; ground $59.

**Chicago:** Demand quiet; supply adequate; $34.

**Baltimore:** Demand quiet; supply adequate; $44.50.

**Milwaukee:** Demand good; supply fair; needles 98¢@1.10; ground screenings $24, sacked.

**Los Angeles:** Demand fair; trend firmer; supply adequate; standard rolled $3.17 cwt., sacked; standard ground $3.17 cwt., sacked.

**Boston:** Demand poor; supply ample; $44.

### BENTONITE (SODIUM)

**Cincinnati:** Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 80 granular $31.50; 200 mesh fine $31.

**Denver:** Demand fair; trend steady; supply ample; $24.50.

**Chicago:** Demand steady; supply adequate; f.o.b. Wyoming and South Dakota shipping points; granular 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 30-ton carlots; 80 granular $13.50 net; 200 mesh fine $13.25 net.

### BLOOD FLOUR

**Louisville:** Demand slow; trend weak; supply good; $100.

### BLOOD MEAL

**Louisville:** Demand slow; trend weak; supply good; $100.

**Portland:** Demand slow; supply ample; trend unchanged; $120.

**New Orleans:** Demand fair; trend steady; supply light; $117@122.

**Ogden:** Supply average; $112.50 in 100-lb. bags, f.o.b. Ogden.

**Chicago:** Demand and supply fair; $140, guaranteed 80% protein.

**Los Angeles:** Demand fair; trend unchanged; supply adequate; $7.75 a unit of ammonia.

**San Francisco:** Demand good; supply tight; $7.25 a unit of ammonia.

### BONE MEAL (STEAMED)

**Portland:** Demand slow; supply ample; trend unchanged; $95.

**Louisville:** Demand slow; trend easy; supply normal; $75@80.

**New Orleans:** Demand fair; trend easy; supply normal; $84@89.

**Cincinnati:** Demand fair; trend easy; supply ample; $90, Cincinnati.

**Ft. Worth:** Demand fair; supply light; $85, f.o.b. Ft. Worth, local manufacture.

**Chicago:** Demand and supply fair; $90.

**San Francisco:** Demand good; supply ample; $75.

**Denver:** Demand good; trend steady to strong; supply scarce; $75, f.o.b. Bay Shore, California.

**Seattle:** Demand steady; trend firm; supply good; $85, ex-dock, truck lots.

**Los Angeles:** Demand steady; trend unchanged; supply adequate; imported $73.50 ton in 20-ton lots.

**Boston:** Demand and supply steady; $90.

**St. Paul:** Improved demand; good supply; $85, f.o.b. producer's plant.

**Buffalo:** Demand good; trend steady; supply ample; $90.

### BREWERS DRIED GRAINS

**Philadelphia:** Demand and supply fair; $59.50.

**Louisville:** Demand slow; trend steady; supply ample; $52.

**New Orleans:** Demand good; supply ample; trend steady; $53@54.50.

**Cincinnati:** Demand poor; trend steady; supply adequate; $54.

**Ft. Worth:** Demand fair; supply moderate; $54.40, November, delivered Ft. Worth.

**St. Louis:** Demand fair; trend steady; supply good; $48.

**Milwaukee:** Demand good; supply fair; $48.

**Chicago:** Demand fair; supply adequate; 26% $48.50.

**Los Angeles:** Demand steady; trend unchanged; supply adequate; $49 bulk, $53 sacked.

**Boston:** Demand active; supply short; 26% $58@59.50; 22% $58.

**San Francisco:** Demand fair; supply ample; $54.

**Buffalo:** Demand fair; trend steady; supply adequate; $50.50, bulk, Boston.

### BREWERS DRIED YEAST

**Portland:** Demand steady; supply ample; trend unchanged; 8½¢ lb.

**Louisville:** Demand slow; trend steady; supply normal; 10@10½¢ lb.

**Los Angeles:** Demand steady; trend unchanged; supply limited; 10¢ lb. in 5-ton lots; 11¢ lb. in 1-ton lots; 12¢ lb. in less than 1-ton lots.

**Chicago:** Demand good; supply limited; 10@11½¢ lb. in carlots; 10¼@12¼¢ lb., l.c.l.

**Omaha:** 10½¢ lb.

**Seattle:** Demand slow; trend steady; supply ample; $12 cwt.

**San Francisco:** Demand fair; supply good; 10¢ lb.

**Denver:** Demand and trend steady; supply limited; 9¢ lb.

**Boston:** Demand and supply steady; 10¢ lb.

**Buffalo:** Demand good; trend firm; supply limited; $10.75 cwt.

**St. Louis:** Demand good; supply limited; 10¢ lb. in carlots; 11¢ lb. in ton lots; 12¢ lb. in less than ton lots.

**Cincinnati:** Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

**Pittsburgh:** Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

**New Orleans:** Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

**New York:** Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

**Milwaukee:** Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12½¢ lb., l.c.l.

### BUTTERMILK-CONDENSED

**Louisville:** Demand dull; trend steady; supply normal; $4.25 cwt.

**Philadelphia:** Demand slow; supply light; $4.25 cwt.

**Wichita:** Demand good; supply insufficient; $2.85 cwt. in barrels.

**New Orleans:** Demand slow; trend steady; supply normal; $4.25@4.30 cwt.

**Ogden:** Supply normal; $4.40, 100-lb. drum.

**Los Angeles:** Demand steady; trend unchanged; supply adequate; 5½¢ lb. in 100-lb. lots; 4½¢ lb. in 500-lb. lots.

**Chicago:** Demand light; supply adequate; $3.25 cwt. in carlots.

**Boston:** Demand slow; supply light; 3½¢ lb.

**San Francisco:** Demand fair; supply good; $5 cwt.

### CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

**New York:** Crystals $15.28, flour $10.28.
**Buffalo:** Crystals $16.11, flour $11.11.
**Toledo:** Crystals $17.96, flour $12.96.
**Boston:** Crystals $16.63, flour $11.63.
**Limecrest, N.J.:** Crystals $10.50, flour $5.50.

### CALCIUM CARBONATE

**Cincinnati:** Demand fair; trend steady; supply adequate; $8@9 cwt.

**Los Angeles:** Demand steady; trend unchanged; supply ample; $10.25.

**Chicago:** Demand steady; supply adequate; fine grind, plain $9.54, 100-lb. bags; bulk, in hopper cars, fine grind $7.54; bulk in boxcars $8.04; granular grind $1 premium.

**Seattle:** Demand and trend steady; supply good; $14, ex-warehouse, truck lots.

**Minneapolis:** Fine grind, 50-lb. bag $12.25, 100-lb. bag $11.50; bulk, boxcar $10; bulk, hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

### CHARCOAL

**Chicago:** Demand quiet; supply adequate; poultry charcoal $106 ton in 50-lb. multiwalls.

**Los Angeles:** Demand slow; trend steady; supply ample; hardwood poultry $156 in less than ton lots; $144.50 in ton lots.

**San Francisco:** Demand steady; supply ample; $141.

**Boston:** Demand and supply light; $100.

### COCONUT OIL MEAL

**Portland:** Demand slow; trend higher; supply limited; $72.50.

**Los Angeles:** Demand limited; trend strong; supply tight; copra cake $72@73, bulk.

**Seattle:** Demand good; trend strong; supply ample; $76, ex-dock, Seattle (Philippine production).

**San Francisco:** Demand fair; supply ample; solvent $71; expeller $73.50.

### COD LIVER OIL (FORTIFIED)

**Boston:** Demand fair; supply good; 600 D, 2,250 A 19¢ lb.; 300 D, 3,000 A 20½¢; 300 D, 2,250 A 18½¢; 600 D, 1,500 A 18¢; 300 D, 1,500 A 17¢.

**New York:** Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 18½@20¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 17½@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

### CONDENSED FISH SOLUBLES

**New Orleans:** Demand light; trend steady; supply limited; 50% solid $89@92, f.o.b. Gulf.

**Denver:** Demand fair; trend steady; supply good; dried $187.40.

**Boston:** Demand active; supply scarce; 5¢ lb., nominal.

**Los Angeles:** Demand steady; trend unchanged; supply adequate; 5¢ lb.

**New York:** Demand and supply fair; trend steady; 4¾@5¢ lb., f.o.b. eastern shore.

### CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

**Minneapolis:** Feed $47.80, meal $83.80.
**Atlanta:** Feed $53.98, meal $89.98.
**Birmingham:** Feed $52.64, meal $88.64.
**Boston:** Feed $52.84, meal $88.84.
**Chicago:** Feed $41, meal $77.
**Cleveland:** Feed $49.14, meal $85.14.
**Denver:** Feed $51.51, meal $87.51.
**Ft. Worth:** Feed $49.96, meal $85.96.
**Indianapolis:** Feed $46.36, meal $82.36.
**Kansas City:** Feed $41, meal $77.
**Louisville:** Feed $48.21, meal $84.21.
**New Orleans:** Feed $51.20, meal $87.20.
**New York:** Feed $52.43, meal $88.43.
**Norfolk:** Feed $51.71, meal $87.71.
**Philadelphia:** Feed $52.02, meal $88.02.
**Pittsburgh:** Feed $49.96, meal $85.96.
**St. Louis:** Feed $41, meal $77.

### CORN OIL MEAL

**Louisville:** Demand slow; trend steady; supply ample; $50.45.

**Cincinnati:** Demand fair; trend steady; supply adequate; $49.

### COTTONSEED OIL MEAL

**Philadelphia:** Demand slow; supply fair; $72.

**Portland:** Demand steady; supply ample; trend unchanged; $60.

**Seattle:** Demand fair; trend steady; supply good; $69, truck lots, 41% expeller process.

**Boston:** Demand fair; supply adequate; $73.

**Denver:** Demand and supply good; trend steady; $62.

**Memphis:** Demand good; trend steady; supply plentiful; prime 41% protein, old process $56; new process, 41% solvent $55.

**Kansas City:** Demand slow in this area; trend steady to stronger; supply adequate; old process meal $56@57, Memphis; solvent process $55@56.

**Chicago:** Demand and supply fair; hydraulic $55.50; solvent $54.50, basis Memphis.

**St. Louis:** Demand fair; trend higher; supply ample; solvent $61.

**Omaha:** Demand poor; supply ample; 41% solvent $59.20, bulk.

**Los Angeles:** Demand and trend steady; supply adequate; local production, expeller $50, bulk; solvent production $58@59, bulk.

**San Francisco:** Demand good; supply ample; expeller $57.50, solvent $62.70.

**Wichita:** Demand slow; supply ample; 41% old process $61.50.

**Ogden:** Supply average; 41% $63@68.

**Louisville:** Demand fair; trend easy; supply ample; old process $62; new process $61.

**Ft. Worth:** Demand good; supply adequate; carlots, 41% old process $57@58; solvent $58.60@59; pellets $2 additional; cottonseed hulls $16.

**New Orleans:** Demand light; trend steady; supply adequate; $64.50@65.

**Cincinnati:** Demand poor; trend steady; supply adequate; old process $67.

**Buffalo:** Demand poor; trend steady to lower; supply adequate; $72, Boston.

### CURACAO PHOSPHATE

**New York:** Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

### D ACTIVATED ANIMAL STEROL, POWDERED

**New York:** Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

**Kansas City:** Demand fair; trend steady; supply adequate; 1,500 ICU 9¾@10¢ lb., 3,000 ICU 11½@12¢ lb., in ton lots or larger.

**Cincinnati:** Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢ lb., warehouse.

### D ACTIVATED PLANT STEROL, POWDERED

**Chicago:** Demand good; supply adequate; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots; less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

### DEFLUORINATED PHOSPHATE

**Tupelo, Miss.:** Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

**Wales, Tenn.:** Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

**Houston:** Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $71.50, net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $68.50 in bulk.

**Coronet, Fla.:** Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17%, carload $60, truckload $60.75, net ton, f.o.b. Coronet in 100-lb. multiwall bags, $57 and $57.75 in bulk.

**Cincinnati:** 18% phosphorus $81; 13% phosphorus $64.98, sacked, f.o.b. Cincinnati.

### DICALCIUM PHOSPHATE

**Texas City, Texas:** 18.5% minimum phosphorus, 21% minimum calcium, 24% maximum, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

**Columbia, Tenn.:** Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

**Chicago:** Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

**Bonnie, Fla.:** Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

**Minneapolis:** 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

**Trenton, Mich.:** Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluorine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

**Portland:** Demand steady; supply ample; trend unchanged; $115.

**Cincinnati:** 18½% phosphorus $82@93.

**Denver:** Demand fair; trend steady; supply ample; $77.70, f.o.b. Texas City, Texas; $15 freight, Denver; paid total $92.70, Denver.

### DISTILLERS DRIED GRAINS

**Seattle:** Demand good; trend firm; supply ample; $67, truck lots.

**San Francisco:** Demand fair; supply ample; solubles $85.

**Boston:** Demand good; supply light; light $56.75@57, dark $58, both bulk.

**Louisville:** Demand fair; trend steady; supply ample; bourbon grains: light $53, dark $55, solubles $77.

**Philadelphia:** Demand slow; supply light; lights $64, darks $65.

**Cincinnati:** Demand poor; trend steady; supply adequate; $55.

**Buffalo:** Demand fair; trend steady to lower; supply adequate; $58, bulk, Boston.

### DRIED BEET PULP

**Portland:** Demand good; trend firm; supply ample; $50.

**Ogden:** Supply normal; $38@42.

**San Francisco:** Demand good; supply fair; $40.40.

**Milwaukee:** Demand good; supply fair; plain $49.50; molasses $49.50.

**Los Angeles:** Demand good; trend firmer; supply tighter; molasses $45.80@47.70, bulk.

**Boston:** Demand fair; supply adequate; $56.

**Seattle:** Demand slow; trend steady; supply good; $45, carlots.

**New Orleans:** Demand fair; trend steady; supply ample; $62@63.

**Ft. Worth:** Demand fair; supply sufficient; carlots, 50-lb. papers: November-December, plain or molasses $54.83@58.

**Buffalo:** Demand poor; trend steady; supply fair; $56.50, Boston.

### DRIED BUTTERMILK

**New Orleans:** Demand slow; supply ample; trend steady; $10.50@11 cwt.

**Louisville:** Demand fair; trend steady; supply ample; 11@11½¢ lb.

**Ogden:** Supply average; $7.25, 100-lb. bag.

**San Francisco:** Demand fair; supply ample; 11¢ lb.

**Chicago:** Demand and supply fair; medium acid $10@10.25; sweet cream $10.50 cwt. in carlots.

**Los Angeles:** Demand steady; trend firmer; supply adequate; 11¾¢ lb.

**Boston:** Demand good; supply tight; 11¢ lb.

**Milwaukee:** Demand and supply fair; $10 cwt.

**Buffalo:** Demand good; trend steady; supply very limited; $11.35 cwt.

### DRIED CITRUS PULP

**Los Angeles:** Demand good; trend steady; supply limited; orange pulp: $41 bulk; lemon pulp: $39 bulk.

**Boston:** Demand slow; supply light; $49.50, f.o.b. shipping points.

**San Francisco:** Demand good; supply fair; meal $54.

**New Orleans:** Demand fair; trend steady; supply ample; $53.50@57.50, f.o.b. Florida.

### DRIED SKIM MILK

**Portland:** Demand slow; supply ample; trend unchanged; 13¢ lb.

**Philadelphia:** Demand slow; supply light; $12.50 cwt.

**Louisville:** Demand fair; trend steady; supply ample; 11½@12¢ lb.

**Cincinnati:** Demand fair; trend steady; supply adequate; 10½@10¾¢ lb.

**Ogden:** Supply normal; $15.15, 100-lb. drum.

**New Orleans:** Demand slow; trend steady; supply ample; $11.50@12 cwt.

**Chicago:** Demand good; supply light; $10.50 cwt. in carlots.

**Milwaukee:** Demand and supply fair; $11 cwt.

**Los Angeles:** Demand steady; trend unchanged; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.

**San Francisco:** Demand and supply fair; 13½¢ lb.

**Boston:** Demand and supply fair; 12¢ lb. in ton lots.

**Buffalo:** Demand good; trend steady; supply ample; spray $10.65 cwt.; roller $11.50 cwt.

**Minneapolis:** Steady trend; good demand; tight supply; $11@12 cwt.

### DRIED WHEY

**San Francisco:** Demand steady; supply good; $5.50 cwt.

**Seattle:** Demand steady; trend firm; supply good; $6.40 cwt., ex-warehouse, l.c.l.

**Chicago:** Demand fair; supply adequate; $5.50, f.o.b. plant.

**Kansas City:** Demand fair; trend steady; supply lighter; $5.50 cwt., producers' plants for regular or partially delactosed.

**Los Angeles:** Demand steady; trend unchanged; supply adequate; $6.16 cwt. in carloads; $6.40 cwt. in l.c.l.

**Boston:** Demand steady; supply plentiful; 5½¢ lb., f.o.b. plant.

**New Orleans:** Demand good; supply adequate; trend steady; $5.50@5.75 cwt.

**Ft. Worth:** Demand fair; supply adequate; carlots, standard $6 November, sacked; $6.25, November, ton lots, f.o.b. warehouse, Ft. Worth.

**Ogden:** Supply average; $6.90, 100-lb. bag.

**Portland:** Demand slow; supply ample; trend unchanged; $7 cwt.

**Philadelphia:** Demand slow; supply light; $6.25 cwt.

**Louisville:** Demand fair; trend steady; supply normal; 6@6½¢ lb.

**Cincinnati:** Demand fair; trend steady; supply adequate; $6.15 cwt.

**Minneapolis:** Steady trend; fair demand; ample supply; $5.50 cwt., producers' points for regular and partially delactosed.

### FEATHER MEAL (HYDROLYZED)

**Ft. Worth:** Demand good; supply moderate; 85% to 87% protein $90@95, f.o.b. trucks, north Texas plants.

**Los Angeles:** Demand steady; trend unchanged; supply fair; $1.25 a unit of protein.

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**Boston:** Demand steady; supply light; $85, f.o.b. shipping point.

### FISH MEAL

**Denver:** Demand good; trend strong; supply scarce; $2.25 a unit of protein, f.o.b. West Coast.

**San Francisco:** Demand fair; supply ample; Peruvian fish meal $2.25 a unit of protein.

**Milwaukee:** Demand and supply fair; 60% $157.50, Milwaukee.

**Los Angeles:** Demand good; trend firm; supply light; local production, 60% protein $2.25 a unit.

**Seattle:** Demand good; trend easy; supply limited; $2.40 a unit protein, ex-dock, Alaska herring.

**Boston:** Demand active; supply very tight; $143.

**Chicago:** Demand good; supply very tight; eastern menhaden fish meal, 60% protein, nominally $150; Gulf, nominally $150; western blended, 60% protein $2.25 a unit of protein, delivered Midwest points $170; Northwest herring-salmon blend, none available; Canadian herring, 73% protein $2.25@2.30 a unit of protein.

**Portland:** Demand slow; trend lower; supply ample; $2.15 a unit, f.o.b. Vancouver, B.C.

**Louisville:** Demand slow; trend steady; supply ample; $165.

**New Orleans:** Demand light; supply limited; trend steady; menhaden, 60% $143@145; scrap $134@135, f.o.b. Gulf.

**Cincinnati:** Demand fair; trend steady; supply adequate; $164.

**Ogden:** Supply normal; $2.20 a unit, f.o.b. Coast; 65% $151@153.

**Ft. Worth:** Demand good; supply limited; sardine $164.90, delivered Texas points from California.

**Minneapolis:** Steady trend; good demand; good supplies; 58 to 60% $165 in truck lots; 70% $2.30 a unit, West Coast.

**Buffalo:** Demand terrific; supply nil; 60% protein, menhaden $175, bulk, nominal; $180, sacked, nominal.

### HAY

**Denver:** Demand and trend slow; supply ample; alfalfa, baled $25, first and second cutting, delivered in Denver.

**Portland:** Demand good; trend higher; supply limited; $29.

**Wichita:** Demand poor; supply ample; prairie $8@10, alfalfa $10@12.

**Philadelphia:** Demand slow; supply light; $32@35.

**Louisville:** Demand dull; trend steady; supply ample; No. 1 clover, mixed clover and timothy, timothy or alfalfa $35, No. 2 $32; straw $20.

**Cincinnati:** Demand fair; trend steady; supply adequate; No. 1 timothy $24; No. 1 second cutting green alfalfa $31; mixed $27; wheat or oat straw $19.

**Ogden:** Supply normal; $1 bale; $15 ton in field, $18 in barn.

**Ft. Worth:** Demand fair for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $36@38, No. 2 $34@36; prairie No. 2 $26@28; No. 2 Johnson grass $24@26, delivered Texas common points.

**Los Angeles:** Fair interest with ample supplies; U.S. No. 1 $32@34; U.S. No. 2 leafy $29@31; U.S. No. 2 green $27@29; U.S. No. 2 $24@26.

**Seattle:** Demand slow; trend firm; supply good; $31, truck lots, U.S. No. 2 green.

**Boston:** Demand good; supply seasonal; No. 2 timothy $40@42; No. 2 red clover $43@45.

### HOMINY FEED

**St. Louis:** Demand slow; trend steady; supply adequate; yellow $43.

**Boston:** Demand cautious; supply ample; $52.50 in bulk.

**Milwaukee:** Demand good; supply light; $44.50.

**Kansas City:** Demand slow after period of active eastern demand late last week; prices easier influenced by declines in corn; supply moderate; yellow $33@33.50, bulk, white $1 less, sacked $3.50 more.

**Memphis:** Demand nil; trend steady; supply ample; white $47, yellow $47.

**Chicago:** Demand fair; supply adequate; $45@45.50.

**Louisville:** Demand slow; trend steady; supply ample; $47.

**Seattle:** Demand fair; trend steady; supply good; $52, carlots.

**New Orleans:** Demand light; supply adequate; trend steady; $47.50@49.

**Cincinnati:** Demand good; trend stronger; supply somewhat limited; $49.

**Buffalo:** Demand and supply fair; trend steady; $50.50, bulk, Boston.

### LINSEED OIL MEAL

**Portland:** Demand slow; supply ample; trend unchanged; $75.

**Wichita:** Demand slow; supply ample; 34% $74.50.

**Philadelphia:** Demand and supply fair; 34% $73.50.

**Louisville:** Demand slow; trend slightly stronger; supply ample; old process $76.40, up 50¢; new process $68.90, unchanged.

**New Orleans:** Demand fair; trend steady; supply adequate; $68.50@69.

**Cincinnati:** Demand poor; trend steady; supply adequate; new process $69.50; old process $76.

**Ft. Worth:** Demand slow; supply adequate; carlots, 34% solvent: November-December $75.50@76; pellets $2.50 premium.

**Chicago:** Demand fair; supply adequate; solvent $54.50@55; expeller $61.50, basis Minneapolis.

**Denver:** Demand fair; trend steady; supply good; $69.

**Omaha:** Demand fair; supply tight; 34% solvent $56.80 bulk; 32% old process $64.80.

**Milwaukee:** Demand good; supply fair; old process $68.50; new process $61.

**San Francisco:** Demand fair; supply ample; $71.

**Boston:** Demand and supply limited; $68, bulk.

**Kansas City:** Demand fair; trend firmer; supply adequate; solvent $51@51.50, bulk, Minneapolis.

**Seattle:** Demand fair; trend steady; supply limited; $78, carlots, 34% protein.

**Minneapolis:** Price up $1; very good demand; tight supplies; solvent $51.50, bulk, November; expeller $58, bulk.

### MALT SPROUTS

**Milwaukee:** Demand good; supply fair; odd weights $42, even weights $43.50.

**Chicago:** Demand fair; supply adequate; No. 1 $41.50.

**Boston:** Demand and supply limited; $42.50.

**New Orleans:** Demand fair; trend steady; supply limited; $45@46.50.

**Cincinnati:** Demand fair; trend steady; supply adequate; No. 1 $48.

### MEAT AND BONE MEAL

**Ogden:** Supply normal; $105 in 100-lb. bags.

**Wichita:** Demand fair; supply sufficient; 50% $107.50, f.o.b. plant; 55%, no quotations, no offerings.

**Louisville:** Demand slow; trend weak; supply good; $90@95.

**New Orleans:** Demand fair; trend steady; supply adequate; $106@108.50.

**Portland:** Demand slow; trend lower; supply ample; $2.05 a unit of protein.

**Ft. Worth:** Demand fair; supply sufficient; meat and bone, 50% $100@102, f.o.b. or delivered Ft. Worth.

**Cincinnati:** Demand good; trend easy; supply ample; 50% meat and bone scraps $95.

**Denver:** Demand slow; trend easy; supply ample; 50% $90.

**New York:** Demand fair; trend steady; supply tight; 50% $87.50, 55% $95, bulk; 50% $90.50, 55% $98, sacked.

**Seattle:** Demand good; trend steady; supply fair; $110, ex-warehouse, 50% protein.

**Omaha:** $105.

**Kansas City:** Demand light; trend easier; supply somewhat larger, although output more improved in other areas than here; 50% meat and bone meal $97.50@98.

**St. Louis:** Demand fair; trend lower; supply adequate; $108.

**Chicago:** Demand fair; supply tight; 50% protein $97.50@107.50.

**Los Angeles:** Demand slow; trend easier; supply ample; 50% protein $2.10 a unit.

**San Francisco:** Demand good; supply fair; $1.90 a unit of protein.

**Boston:** Demand light; supply good; $1.55 a protein unit; converted, 50% $90.

**St. Paul:** Improved demand at lower price; good supplies; 50% meat scraps $95@98.

**Buffalo:** Demand fair; trend lower; supply ample; 50% meat scraps $97.50 bulk, $102.50 sacked.

### MILLFEED

**Minneapolis:** Good feed demand and short inventories have brought a tight supply situation and higher prices; bran $34@34.50, middlings $33@34, red dog $42@47.

**Kansas City:** Demand fair to good; trend steady to firmer; mills running at heavy rate but buyers taking supplies well and no surplus developing; Kansas City market too high for shipment east; bran $32.50@33, shorts $34.50@35, sacked; bran $27.50@28.25, middlings $29@29.75, shorts $30@30.75, bulk.

**Wichita:** Demand fair for mixed cars; supply sufficient; basis Kansas City: bran $33@33.50, shorts $34@34.50; bran advanced 25¢ and shorts $1.25, compared with the preceding week.

**Omaha:** Demand good; supply ample; sacked bran $34; sacked gray shorts $36; bulk standard midds. $32.

**Ft. Worth:** Demand good; supply limited for immediate; carlots, burlaps, prompt, bran $42, gray shorts $43, delivered Texas common points; unchanged on bran and 50¢ higher on shorts compared with previous week.

**Chicago:** Bran and standard midds. showed gains at the end of the week, but flour midds. and red dog posted losses for the period. And, by the close, the whole list of millfeeds was weak. Some slowing of formula feed business is thought to be partly responsible for the easiness at the close, along with ample output by flour mills. Quotations: bran $37.50@38, standard midds. $37.50@38, flour midds. $44@45, red dog $46.50@47.

**Cincinnati:** Demand fair; trend steady to higher; supply adequate; bran $43.50, middlings $44.50.

**Boston:** Demand improved; supply spotty; bran $48.50, middlings $49.50.

**Buffalo:** Trading was fairly good last week. There has been a pickup in dairy business, mostly for bran from the New England area and parts of New York state. Middlings went along for the ride, but there was enough demand to command a $1 premium over bran. Shipping positions were thin. Sacked and bulk bran and middlings ended the week unchanged. Red dog held steady. Quotations Oct. 29: bran $39.50@40.50, standard midds. $40.50@41.50, red dog $48@49.

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Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Boston, Galveston, Enid, Minneapolis, Norfolk, San Francisco, Nashville, Louisville, Memphis, Houston

**Philadelphia:** Demand and supply fair; trend unsettled; bran $48.50, standard midds. $50, red dog $56.50.

**New York:** Demand and supply fair; trend lower; bran $46.75@47.50; standard midds. $48.25@49.

**New Orleans:** Demand fair; trend steady; supply adequate; bran $44.75@45.50, shorts $45.75@46.50.

**Louisville:** Demand fair; trend strong; supply good; bran $45, mixed feed $46.10, gray shorts $47.60, standard midds. $45.80.

**Memphis:** Demand fair; trend lower; supply ample; wheat bran $41, gray shorts $42.50, standard midds. $42.

**Denver:** Demand steady; trend slightly weaker; supply tight; bran $40, shorts $42.

**Seattle:** Demand good; trend easy; supply ample; $39, delivered common transit points, carlots.

**Portland:** Demand slow; trend lower; supply ample; mill run $36@36.

**Ogden:** Supply normal; for Utah and Idaho: red bran and mill run $38, middlings $43; to Denver: red bran and mill run $45, middlings $50; to California: red bran and mill run $45.50, middlings $50.50, f.o.b. San Francisco and Los Angeles.

**Los Angeles:** Standard mill run $42.50@43.50, bulk, demand improved, trend firmer, reduced offerings; red bran $44@46, bulk, light demand, slightly firmer, adequate supplies.

**San Francisco:** Demand fair; supply ample; millfeed $45.50, red bran $47.50.

### MINERAL FEED

**Wichita:** Demand good; supply sufficient; all-purpose with iodine, 50-lb. blocks $95, 100-lb. bags $90, f.o.b. plant.

**Portland:** Demand slow; trend ample; supply unchanged; $42.

**Ogden:** Supply normal; $113 in 50-lb. blocks; $103, granular, 50-lb. bags.

**Sioux City:** 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

**Ft. Worth:** Demand fair; supply ample; all-purpose granules $89, block $94; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $99, block $103; hog mineral phosphorus 3½% granules $38, phosphorus 2% $78 (all in 50-lb. paper bags).

**Denver:** Demand fair; trend steady; supply ample; $155.

**Seattle:** Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse; all-purpose mineral $85, ex-warehouse.

**San Francisco:** Demand steady; supply good; all-purpose with iodine $70.

### MOLASSES

**San Francisco:** Demand and supply good; $25, f.o.b. cars, Richmond, Cal.

**Denver:** Demand fair; trend slightly lower; supply good; 13¢ gal., New Orleans.

**Seattle:** Demand fair; trend steady; supply good; $25, f.o.b. Seattle, tank car lots or truck lots.

**Ft. Worth:** Demand fair; supply sufficient; blackstrap 15¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $33.35, seller's market price on date of shipment.

**Minneapolis:** Trend lower; moderate demand; good supply; 13½¢ gal., New Orleans.

**St. Louis:** Demand slow; trend steady; supply ample; 13½¢ gal., New Orleans.

**Memphis:** Demand fair; trend steady; supply ample; blackstrap 13⅝¢ gal., tank car, f.o.b. New Orleans.

**Kansas City:** Demand slow, although shipments are going forward on bookings; prices easier with some indications that business could be done below quoted basis; sellers apprehensive over Cuban political unrest, but buyers not impressed; 13⅜¢ gal., tank cars, New Orleans, through January.

**Los Angeles:** Demand steady; trend unchanged; supply adequate; $25, bulk, f.o.b. tank cars; $25.25, bulk, f.o.b. tank trucks.

**Boston:** Demand improved; supply plentiful; 17½¢ gal. in tank cars.

**New York:** Demand and supply good; trend steady; blackstrap 17¢ gal., tank cars, tank wagons, f.o.b. New York.

**New Orleans:** Demand fair; trend steady; supply ample; 15¢ gal., tank cars and trucks; 600-lb. customers' drums $9.62.

**Louisville:** Demand slow; trend steady; supply normal; 13¾¢ gal., tank car lots, f.o.b. Gulf ports.

**Cincinnati:** Demand fair; trend lower; supply adequate; 13¾¢ gal., New Orleans.

**Buffalo:** Demand and supply good; trend steady; 17½¢ gal., f.o.b. Albany.

### NIACIN

**New York:** Trend steady; $8 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

### OAT PRODUCTS

**Los Angeles:** Demand fair; trend firmer; supply adequate; pulverized, local production $61.

**Memphis:** Demand poor; trend steady; supply ample; 3½% protein, reground oat feed $19.25.

**Minneapolis:** Prices up slightly; slower feed demand; good supplies; feeding rolled oats $78; feeding oatmeal $69; pulverized $44.50; crimped $53; reground $15.

**Chicago:** Demand fair; supply adequate; reground oat feed $13@13.50; fine ground feeding oatmeal $70@70.50; feeding rolled oats $79@80.

**Seattle:** Demand fair; trend steady; supply ample; $49, bulk, truck lots.

**Boston:** Demand and supply steady; white pulverized $55; ground mixed $44.45; reground oat feed $17.50.

**Louisville:** Demand slow; trend stronger; supply normal; reground $21.30, rolled $84.30, feeding $78.30, pulverized $49.30, crimped $64.30.

**Philadelphia:** Demand slow; supply fair; pulverized white $52; Canadian oat feed $26; domestic oat feed $24.

**Portland:** Demand slow; supply ample; trend unchanged; rolled $61; ground $58; cleaned $60.

**Ft. Worth:** Demand slow; supply sufficient; oat millfeed $43.50; reground oat millfeed 3% protein, sacked $22.

**Cincinnati:** Demand poor; trend steady; supply adequate; reground oats $22; pulverized white oats $48; rolled oats $83.

### OYSTER SHELL

**New Orleans:** Demand good; trend steady; supply plentiful; $17@17.50.

**Louisville:** Demand fair; trend steady; supply ample; in 80-lb. paper bags $22.85, 50-lb. paper bags $23.10, 25-lb. paper bags $25.35.

**Portland:** Demand slow; supply ample; trend unchanged; western $34, eastern $38.50, granite grits $26, shell flour $24.

**Cincinnati:** Demand fair; trend steady; supply adequate; $23.45.

**San Francisco:** Demand fair; supply ample; local $15, eastern $26.

**Los Angeles:** Demand fair; trend steady; supply ample; $14.80.

**Seattle:** Demand and trend steady; supply good; eastern $35, carlots.

**Boston:** Demand and supply steady; in paper $25.

### PEANUT OIL MEAL

**Milwaukee:** Demand and supply fair; 26% $42.

### PEAT MOSS

**Chicago:** Demand fair; supply short; $3.60@3.70, standard 7⅛ cu. ft. bale.

**New York:** Demand and supply good; trend downward; Canadian, 7 cu. ft. bale, veneer wrapped $3.32, f.o.b.; German, 7⅛ cu. ft. bale $2.62, at dock, New York.

**Los Angeles:** Demand fair; trend unchanged; supply ample; Canadian, 6.1 cu. ft. bales $3.85.

**San Francisco:** Demand fair; supply ample; $3.75 bale.

**Portland:** Demand slow; supply ample; trend unchanged; $3.25 bale.

**Philadelphia:** Demand and supply light; $2.80 bale, f.o.b. pier.

**Seattle:** Demand poor; trend easy; supply good; $2.70 bale, truck lots.

**Boston:** Demand and supply seasonally steady; $3.15 bale in carlots.

### POTASSIUM IODIDE, U.S.P.

**Cincinnati:** Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.35; 200 lb. in 100-lb. drums $1.35; 100-lb. drums $1.38; 25-lb. drums $1.41.

**Chittenango, N.Y.:** Demand good; supply adequate; 90% KI stabilized with calcium stearate, 200 lb. in 100-lb. cartons $1.35; 100-lb. cartons $1.36; freight prepaid to destination.

### POULTRY BY-PRODUCTS

**Ft. Worth:** Demand good; supply moderate; 55% protein $100@105, f.o.b. north Texas plants.

**Los Angeles:** Demand steady; trend firmer; supply adequate; $1.90 a unit of protein.

**Boston:** Demand fair; supply tight; $97@100.

### RIBOFLAVIN

**New York:** Trend steady; feed grade (in feed supplements) 4½¢ gm. in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

**Cincinnati:** Trend steady; feed grade (in feed supplements) 4¢ gram in less than ton lots in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more, freight prepaid or paid to destination.

### RICE BY-PRODUCTS

**Ft. Worth:** Demand fair; supply very scarce; carlots, rice bran $35@36, f.o.b. south Texas rice mills; hulls $2, f.o.b. mills.

**Los Angeles:** Demand fair; trend steady; supply adequate; California production, high fat content $48.

**San Francisco:** Demand fair; supply ample; bran $40, polished $49.

### SCREENINGS

**Chicago:** Demand fair; supply adequate; ground grain screenings $30.50; Canadian bulk $22.50.

**Minneapolis:** Prices up slightly as demand improved while supplies continued light; lights $2@10, mediums $11@20, heavies $21@32; Canadian, bulk $17; Canadian ground $25; flaxseed screenings $38; oil type flaxseed screenings $43, basis 15%.

**Cincinnati:** Demand fair; trend steady to higher; supply adequate; ground grain screenings $38, sacked; malt house $27, sacked; Canadian $28, bulk.

**Ft. Worth:** Demand almost nil; supply sufficient; ground $28, nominal.

**Buffalo:** Demand fair; trend steady to higher; supply adequate; ground $31.50, New York, lake and rail; unground, bulk $24.50, New York.

### SOFT PHOSPHATE WITH COLLOIDAL CLAY

**Atlanta:** $20.40@20.67.
**Buffalo:** $25.31@25.45.
**Chicago:** $24.77@24.90.
**Cincinnati:** $23.47@23.60.
**Des Moines:** $25.23@25.35.
**Kansas City:** $24.88@25.
**Memphis:** $22.20@22.47.
**Minneapolis:** $25.92@26.06.
**Philadelphia:** $24.32@24.95.
**St. Louis:** $24.14@24.27.

### SORGHUMS

**Ft. Worth:** Demand fair; offerings light as crop going into government loan; carlots, bulk, No. 2 yellow milo $2.17@2.20, delivered Texas common points.

**Los Angeles:** Demand better; trend firmer; supply adequate; milo $2.32½ cwt., bulk.

### SOYBEAN OIL MEAL

**Omaha:** Demand good; supply adequate; 44% $53.40, bulk, delivered Omaha.

**Minneapolis:** Prices moved up under good demand; supply ample; 44% $53.50, bulk, Minneapolis; 50% $55, bulk, Minneapolis.

**Los Angeles:** Demand fair; trend steady; supply ample; $73, bulk.

**St. Louis:** Demand steady; trend fair; supply fair; 44% $57.

**Chicago:** Soybean oil meal drifted lower during the week ending Oct. 29, prompted by heavy supplies and the tendency of feed manufacturers to hold their purchases to a minimum. Feed business also has slowed recently, making slow buying of meal possible. Quotations: 44% protein soybean oil meal, bulk, unrestricted, basis Decatur $47; eastern restricted $45@45.50; 50%, bulk, unrestricted, basis Decatur $53.50; eastern restricted $51.50.

**Memphis:** Demand good; trend steady; supply plentiful; prime 44% solvent $55.50.

**Kansas City:** Demand fair to good; trend easier, but some recovery from Iowa late last week; offerings ample; no forward booking in this area; feed buyers would take forward position at discounts but processors refuse; Kansas City and western shipment $44.50@45, bulk, Decatur; unrestricted $47@47.50.

**Milwaukee:** Demand good; supply fair; $46.50, bulk, Decatur.

**Seattle:** Demand steady; trend weak; supply ample; $78, carlots.

**Denver:** Demand fair; trend steady; supply good; $65.

**San Francisco:** Demand fair; supply ample; $77.50.

**Boston:** Demand slow; supply ample; 44% $46; 50% $52.50, both f.o.b. bulk, Decatur.

**Portland:** Demand slow; trend lower; supply ample; November-December $43.

**Wichita:** Demand good; supply fair; 44% $62, 50% $70, f.o.b. Wichita.

**Philadelphia:** Demand and supply fair; trend unsettled; 44% $46.50, bulk, Decatur.

**Louisville:** Demand slow; trend easy; supply good; $58.70.

**New Orleans:** Demand fair; trend steady; supply normal; $66@67.

**Ogden:** Supply normal; $81@86.

**Cincinnati:** Demand poor; trend lower; supply adequate; $46, bulk, Decatur.

**Ft. Worth:** Demand slow; supply sufficient; carlots, 44%: $69 November-December, $71.50 January-March, coupled; 50% protein: $76 November-December, $79 January-March, coupled; $80 January-June; truck meal 44% $63 scattered November-December.

### TANKAGE

**Omaha:** $105.

**St. Louis:** Demand fair; trend lower; supply adequate; $111.

**Chicago:** Demand and supply fair; 60% protein $107.50@112.50.

**Kansas City:** Demand and supply fair; trend weaker; supply moderate but adequate at the moment; 60% digester $102.50@105.

**Cincinnati:** Demand and supply fair; trend easy; 60% digester $105.

**New Orleans:** Demand fair; trend steady; supply ample; $119.50@120.

**Wichita:** Demand fair; supply sufficient; 60% $110, f.o.b. plant.

**Louisville:** Demand slow; trend weak; supply good; 60% $97.50@102.50.

**Ft. Worth:** Demand slow; supply light; 60% digester $102@104, f.o.b. Ft. Worth.

**St. Paul:** Demand fair; good supplies; 60% digester $98@101.

### VEGETABLE AND ANIMAL FAT (HYDROLYZED)

**Ft. Worth:** Demand good; supply limited; 7⅝¢ lb., f.o.b. north Texas area.

### VITAMIN E FEED SUPPLEMENT

**Rochester, N.Y.:** Demand and supply good; trend steady; 100-lb. drums $1.70 lb., 25-lb. drums $1.75 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

**New York:** Demand and supply good; trend steady; 100-lb. drums $1.70 lb., 25-lb. drums $1.75 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

**Cincinnati:** Demand good; trend steady; any quantity in 100-lb. drums $1.50; in 25-lb. drums $1.55; freight allowed to destination.

### WHEAT GERM MEAL

**Chicago:** Steady trend; moderate demand; good supply; $87@92.

**New Orleans:** Demand and supply fair; trend steady; $108@110.

**Buffalo:** Demand fair; trend lower; supply poor; commercial grade $85, f.o.b. Buffalo.

## CORNELL

(Continued from page 1)

operation with the American Feed Manufacturers Assn.

Among the discussions of current interest will be talks on feeding trials with pelleted feeds and the metabolic effects of pelleted feeds.

Recent research on amino acid requirements of poultry will also come in for attention, with three talks on amino acids.

Studies on certain mineral requirements will be reported, and two talks will deal with selenium.

The use of enzymes in feeds will be discussed, too, and further information on fats in poultry feeding will be presented.

Other talks will cover such things as brood sow feeding, dairy cattle and calf feeding and the role of ethanol in ruminant nutrition.

On Thursday evening, Nov. 13, there will be an AFMA social hour, a buffet supper and a showing of the AFMA film "Feed to Food."

(Program details, including speakers, appeared in Feedstuffs, Oct. 4.)


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## TURKEYS

(Continued from page 1)

of the year, it does indicate a trend, observers said.

Added to this is the outlook for plenty of feed at prices about the same as they were this year.

"The turkey producer is perennially optimistic," one trade official said. "And he's more optimistic than usual this fall because he made a little money this year. In fact, one producer told me that anyone who couldn't make money with turkeys this year better get out of the business."

Average farm prices were slightly higher through the year than they were a year earlier. At mid-August, prices to farmers averaged 24.9¢ lb., against 22.7¢ a year earlier. Mid-July prices were 24.6¢, compared with 21.8¢ a year earlier. On Oct. 24, farm prices for live poultry in Iowa were quoted by the USDA as mostly 26¢ for young hens and 22¢ for young toms.

### Margin Over Feed

What this has meant to the producer, according to a statistician for one feed firm, has been an average margin over feed costs 25¢ a bird higher than in 1957. The 1957 margin was $1.80 a bird, he said, and the 25¢ increase would bring it up to $2.05 for 1958.

Midwest feed costs this year have been estimated at about 12¢ to 13¢ lb. for broilers and 15¢ to 16¢ lb. on heavies, depending on when they are sold. Cost of production including labor and financing has been set at about 22¢ lb. for both lights and heavies by one feed firm.

There are, however, a few factors seen as possible deterrents to a large increase during the coming year. One of them is the price outlook for the coming two months.

### Prices Currently Low

Midwest prices late this week had fallen to 21¢ for toms and 25¢ for hens, and most observers said the outlook for the usual seasonal increase is somewhat bleak. They said storage stocks Oct. 1 were 161 million pounds, a sizeable increase over the previous Oct. 1 record of 149 million pounds in 1957. The outlook for Nov. 1 is another record, they said. Nov. 1 storage stocks a year ago were 241 million pounds.

### More Competition

The situation this year is a little different from a year ago. A shortage of red meat supplies in 1958 resulted in strong disappearance of turkey earlier in the year. Competition from broilers and more red meats later this year slowed the trend, and observers said that the increases in red meat next year make the big storage stocks of turkey more of a problem this winter.

One observer said he thinks the large storage supplies brought the recent break in prices.

"The retailers can't see anything but a 39¢ Thanksgiving price for hens and 35¢ for toms," he said. "It looks now as though the prices paid the farmers during November and December will be about the same as they were a year ago. These late season prices and the big storage stocks may be a deterrent to heavy production next year, but that's something you just can't predict."

A few other predictions for the coming year included the following:

**Heavies vs. Lights:** The trend to heavy birds is expected to continue, particularly among the individual and smaller producers who find it difficult to compete with the efficiency of the large turkey broiler producers.

"It's a battle between the consumer and producer," one observer said. "The producer likes the big bird, the consumer the smaller one. Ultimately the consumer will win, but it won't happen in 1959."

**Size of Flocks:** The trend continues toward larger flocks as marginal operators drop out and the larger producer expands for more efficiency. Turkey broiler producers, especially, are expected to continue rapidly in the trend toward larger flocks. In Minnesota, one of the leading turkey states, 25% of the growers now produce 75% of the state's turkeys.

**Financing:** Finance officials for feed firms said financing was no less liberal during the past year than it has been in the past, but that selection of growers has been more effective.

"We are going less by the old rules of thumb and more by the individual grower," one finance man said. "We're learning more about selection all the time, and I think we're handling credit with more confidence than in the past."

**Feeding:** More complete feeds are being used in the later growing and finishing periods than in the past because of the evidence that the turkey can't balance its own ration. Observers said that today's specialized grower is much more aware of nutritional developments than in the past and that he will continue to be. "Steadily improving feed conversions and the lower mortality resulting from good nutrition are putting money in the grower's pocket," a feed mill representative said. "The grower knows it is one way he can beat the small margins facing him."

## BREEDER HENS

(Continued from page 1)

heavy white breed hens in nine states ranging from 4% in Pennsylvania to 54% in Minnesota. New York, South Carolina and Oklahoma expect a decrease in white breed holdings of 2, 10 and 45% respectively, while Missouri and Washington expect about the same number as last year.

Increases in holdings of bronze and heavy breeds are expected in 10 states. Expected increases are 20% in Wisconsin, 15% in Minnesota and Missouri, 10% in Iowa, 8% in Ohio and Texas, 6% in California, 5% in Michigan, 4% in Pennsylvania, and 2% in South Carolina. Oklahoma expects to hold about the same number as last year, while Oregon, New York, Virginia and Washington expect to decrease holdings by 3, 20, 35 and 48% respectively.

Breeders' intentions indicate an increase in light breed hens ranging from 19% in Pennsylvania to 67% in Iowa. Minnesota and Virginia, the two largest producing states of light breed turkeys, expect increases of 60% and 30%, respectively.

**Turkey Breeder Hen Intentions—1959 Hatching Season**

Intentions to Hold Turkey Breeder Hens at Beginning of 1959 Season as Per Cent of Holdings a Year Earlier

| | —Heavy breeds— | | |
|---|---|---|---|
| | Heavy white | Bronze and other heavy | Beltsville and other light |
| | % | % | % |
| New York | 98 | 80 | ** |
| Pennsylvania | 104 | 104 | 119 |
| Ohio | 110 | 108 | 120 |
| Michigan | 145 | 105 | ** |
| Wisconsin | 140 | 120 | ** |
| Minnesota | 154 | 115 | 160 |
| Iowa | 135 | 110 | 167 |
| Missouri | 100 | 115 | 150 |
| Virginia | 125 | 65 | 130 |
| S. Carolina | 90 | 102 | ** |
| Oklahoma | 55 | 100 | 125 |
| Texas | 114 | 108 | 125 |
| Washington | 100 | 52 | ** |
| Oregon | ** | 97 | 150 |
| California | 150 | 106 | 150 |
| Total 15 states | 125 | 104 | 138 |

**Not shown to avoid disclosing individual operation.

## School Lunch Turkey Purchase Announced

WASHINGTON — Purchase of 1,170,000 lb. of turkey by the U.S. Department of Agriculture for use in the National School Lunch Program was announced last week. The purchase brings the total purchases since the program started July 31 to 18,120,000 lb.

The USDA announcement said offers for around 1 million pounds weekly will be considered until further notice.

Prices paid for the last purchase ranged from 32.32¢ to 34.45¢ lb. Offers were accepted from five of 20 bidders who offered a total of 5,010,000 lb. Approximately $386,000 of funds transferred by Congress from Section 32 for use under the National School Lunch Act will be expended for the purchase, bringing the total to $6,202,000.

In making awards, consideration was given to transportation costs for distribution. Specifications call for frozen, ready-to-cook, whole turkeys in carlot quantities within weight ranges of 18 to 24 lb.

### HEADS COMMITTEE

CONCORD, N.H.—Harold H. Todd, Merrimack Farmers Exchange, Inc., operator of a large feed mill in Bow, N.H., and more than a score of grain stores throughout the state, has been named chairman of a 30-member committee which will arrange for the observance of Farm-City Week in all parts of the state, Nov. 21-27.

**TEXAS PLANT—Completion of the purchase of Universal Mills, Inc., Ft. Worth, by Allied Mills, Inc., Chicago, was announced this week. The mill, one of the largest in the South, has a monthly capacity of 15,000 tons and storage capacity of more than a million bushels.**

## ALLIED MILLS

(Continued from page 1)

ending last June, and the company reports its production is running 20% ahead of 1957. With the Universal Mills acquisition, it will have dealer distribution in 34 states, four more than previously.

Universal was founded in 1922 by the late Gaylord Stone. It has grain storage facilities of more than a million bushels and a feed manufacturing capacity of 15,000 tons a month.

### Comment on Purchase

Mr. Lenz commented: "It is with genuine pride and pleasure that Allied Mills becomes a part of the feed industry in the great agricultural state of Texas, through the acquisition of the company that over a period of 36 years built an enviable reputation for the well-known Red Chain brand of feeds. We will use the resources of our research, manufacturing, finance and sales to further the growth of this essential industry in this area.

"With the prospect that the demand for manufactured feeds may double by 1975, and with the aggressive program we have in the making, we expect this Ft. Worth plant to be one of our largest-producing units in the near future," he said.

Allied Mills, established in 1898, operates feed manufacturing plants at Peoria, Ill.; Ft. Wayne, Ind.; Omaha, Neb.; Buffalo; East St. Louis, Ill.; Mason City, Iowa; Portsmouth, Va.; Memphis; Gainesville, Ga.; Everson, Pa., and Guntersville, Ala. It also operates a specialty feed plant at Greenville, Ohio; a soybean plant at Taylorville, Ill., and alfalfa plants at Cozad, Elm Creek and Darr, Neb.

Allied's research center and a 650-acre research farm are located at Libertyville, Ill. The company's retail stores division is operated from Ft. Wayne. Headquarters are in the Morton Salt Building, 110 W. Wacker Drive, Chicago.

## ALABAMA SORGHUM TOPS MILLION BUSHELS

**AUBURN, ALA. — Alabama farmers are harvesting their first million-bushel grain sorghum crop, according to O. N. Andrews, extension agronomist at Virginia Polytechnic Institute. The 1958 yield is estimated at 21 bu. per acre, the highest on record. Last year's sorghum production was 774,000 bu., and the 10-year average was 538,000 bu. A total of 48,000 acres was planted this year, an increase of 5,000 over last year's planting. The use of new hybrids, in addition to favorable weather, has resulted in the banner crop, Mr. Andrews said.**

Max Cooley — W. J. Monson — J. G. Pierce — H. J. Konen — W. A. Glista

**TO DISCUSS MICRO-INGREDIENTS—The Feed Production School, to be held Nov. 12-14 in Kansas City, will have as its principal theme bulk handling. In addition there will be several specialized sessions on various phases of feed plant operations. One of these will deal with micro-ingredients—premixing and mixing. Shown here are members of the panel—Max Cooley, Hoffman-Taff, Inc., Springfield, Mo. (chairman); Dr. W. J. Monson, Borden Co., New York; James G. Pierce, Walnut Grove Products Co., Atlantic, Iowa; Harry J. Konen, feed consultant, Houston, and Dr. Walter Glista, Wirthmore Feeds, Inc., Waltham, Mass. The school is sponsored by the Midwest Feed Manufacturers Assn., Kansas City.**

# UP OR DOWN?

By Leonard W. Schruben

Agricultural Economist, Kansas State College

## Feed Concentrate Situation

Still the records fall! Nationally, corn, grain sorghum and soybean production reaches a record crop for each of the three grains. Where are we with feed grains and where do we go from here? Manufactured feed will compete with cheap grains.

Locally offering price for corn is 88¢ bu., and grain sorghum is selling at $1.50 cwt. In the soybean belt, prices are down. This means that the consensus of among those who have grain for sale and those who are buying is that an adequate supply is assured. They couldn't be more right.

One of the best "over-all" indicators of the feed situation is the supply of feed concentrates per animal unit. Changes since 1926 are shown in Exhibit 1. An animal unit is equivalent to one milk cow as far as feed consumption is concerned.

You will notice that tons per animal unit are expected to be at a very high level when compared to earlier years, possibly reaching a record of 1.40 to 1.45 this coming season. Actual feeding rates have been close to .80 ton per unit, and the remainder represents the amount available for carryover at the end of the year, exports and other uses.

The total supply of feed grain and other concentrates for the 1958 feeding season, beginning Oct. 1, will surpass the previous record by 8%, according to estimates by the Crop Reporting Board. Record crops of corn, barley and grain sorghum were or are being harvested. This production results from record yields per acre. Corn yields are expected to average over 50 bu. per acre. The recent 10-year average is 38.8 bu. per acre.

Feed grain use is at a high rate. For example, corn disappearance during the July-September quarter was second of record and 150 million bushels above the average of 535 million. This year's fall pig crop will exceed last year's by 17%. A continued heavy feeding rate is expected as most livestock-feed price ratios are favorable, due largely to lower feed prices. However, ample supplies are assured.

Pricewise, downward pressure is expected to continue. The usual trend is for prices to recover after the harvest is completed. How much recovery can be expected this year is quite uncertain, but not much is expected. Future articles will discuss in more detail price prospects for each of the fall-harvested grains.

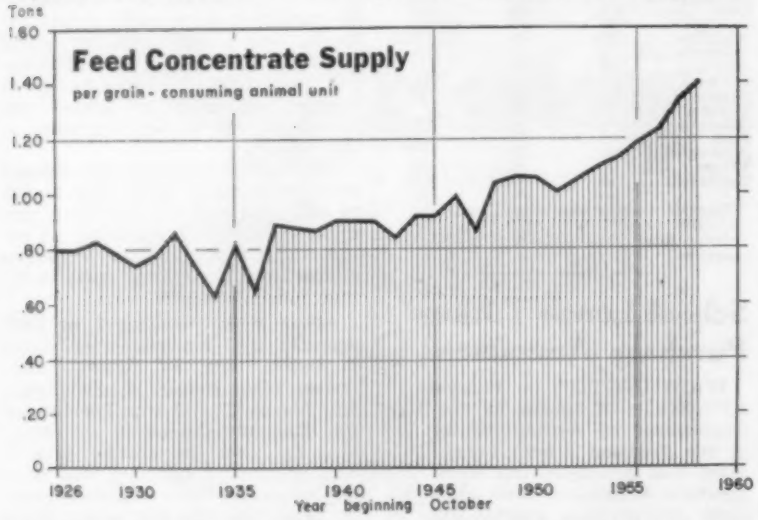


**EXHIBIT 1. Feed concentrate supply per grain-consuming animal unit, years beginning October, 1926-58.**

## WIRTHMORE

(Continued from page 11)

nature, for testing new rations and ingredients and medicaments as well as management methods. The greatest portion of the work is with poultry, reflecting the dominant feed demand in the area served by Wirthmore.

The present farm was acquired in 1954 after the original farm, established in Lynnfield Center in 1919, became hemmed in by surburban development. With zoning restrictions and close neighbors it became impractical to continue operating the farm as a research unit. Four poultry buildings on the present property were modified for research work, and a construction program, still in progress, was started.

The first new unit, for broiler research, was completed in 1955. The farm now has a housing capacity for 10,000 layers and breeders, 10,000 broilers, 3,000 turkeys, 250 pigs and hogs and 250 mink. More than 13,000 replacement pullets are reared annually on 48 ranges and in confinement.

Here are further details on some of the farm units:

**BROILER NO. 1:** Features a hot water brooding system, self-storing hovers and forced air ventilation. Each floor is operated as an independent unit and each experiment is usually replicated in four pens. Researchers point out that because of the uniformity attained in this building, differences as small as .05 lb. body weight or feed efficiency per broiler of market age have been found to be statistically significant.

**BROILER NO. 2:** Coccidiostats, antibiotics and other additives are tested in this unit. The windowless building houses 3,300 broilers in 96 double-decked 4 by 4 ft. pens. Infrared bulbs provide heat for brooding. Birds are normally brooded on litter, but portable wire floors may be installed for immunity testing.

**LAYER HOUSE:** This two-story plus basement facility houses 6,720 laying hens, including a 720-bird cage layer unit in the basement. Also in the basement are a storage area and the egg grading and holding rooms. On the first floor there is a slat floor section consisting of four pens for 2,600 light-weight layers. There are several other pens on the second and third floors, including some with special lighting facilities.

The insulated egg-cooling room is equipped with an air conditioning unit, racks and a germicidal lamp. An elevator brings eggs from floors above to the adjoining grading room.

**BREEDER UNITS:** Four buildings house birds of several popular meat-type and production-type breeds and strains used in breeder studies. One of the buildings, with half of the windows blocked out, is designed especially for management studies. Currently vitamin requirements for breeders under various environmental conditions are being studied. Also, a test due to be completed this fall is being conducted on controlled feeding of meat-type breeders.

**TURKEY UNITS:** A 24 by 172 ft. plywood building is used as a brooder house for poults or replacement pullets. Current studies involve interrelationships between sources of protein, protein levels and energy levels of young birds. A pole-type building is used for research with older turkeys, including breeder rations.

Also, more than 2,000 turkeys are reared on the 28 turkey ranges on the farm. They include both bronze and white varieties. Nutritional work involves protein-energy relationships, value of new ingredients and a re-evaluation of vitamin and mineral requirements in practical growing feeds. Drugs for disease prevention also are tested.

**SWINE UNITS:** One unit, for farrowing and weaning studies, holds 8 sows with their litters and 60 to 120 weaned pigs. Radiant heating in the floor, removable farrowing crates and germicidal lights are some of the features of the unit. Studies here have dealt mainly with fermentation products, antibiotics and other additives and protein-energy combinations.

A second unit is used for growing-finishing studies. It is of pole-type construction, with a trussed roof covered with corrugated steel roofing. The concrete floor is pitched to a central drain and settling basin. Feed storage and weighing areas are located at each end of the unit.

**MINK UNIT:** Work at this unit, designed to house 250 mink, is aimed at developing a complete cereal ration for mink which would not require supplementation with fresh meat and meat products.

Test rations for the experimental animals and poultry on the farm are mixed in a specially-designed unit at Wirthmore's Bridgewater, Mass., plant 18 miles from the farm. The mixing room and personnel are used exclusively for producing test rations. Most of the ingredients used in volume are taken from regular plant stock, although supplies of special items are maintained for the experimental rations. The system is designed for quick and complete clean-out between batches.

Additional units planned for the farm include a rabbit unit, a cage layer house, a farm pond for fish ration studies and a dairy calf unit.

Robert F. McLeod, president of Wirthmore, strongly emphasized the importance of research in over-all company operations in his talk presented at the headquarters building dedication. It is apparent that much of the anticipated future growth of the company is expected to be led by diligent research efforts.

The company, a subsidiary of the Corn Products Refining Co., operates eight feed mills and distributes in 17 states from Maine to South Carolina and west to Michigan. Distributors include about 900 independent dealers and 90 company-owned stores.

## SCHOOL

(Continued from page 6)

Kansas City. It is designed, Mr. Burns explained, to be of help to all supervisory personnel in understanding the forces that control human behavior, for more effective management. Mr. Leiter will show how to work effectively with others. He will outline personal requirements for leadership, explain what motivates people and tell how to analyze and predict behavior.

Since the production school details were first announced (Feedstuffs, Oct. 11), certain program changes have been made. Erwin Wascher, Honeggers' & Co., Fairbury, Ill., will take over the discussion of product identification in bulk handling, and Robert Wornick, Chas. Pfizer & Co., Inc., Terre Haute, Ind., has been named to head the specialized session on liquids handling and mixing.

### Demonstrations

The machinery used in demonstrations, Mr. Burns noted, will remain in the American Royal Bldg. on Saturday, Nov. 15, so that enrollees who wish to stay over and other interested feed men may see further demonstrations.

The equipment firms participating in the school were listed as follows: AAA, St. Louis; Archer-Daniels-Midland Co., Kansas City; Bemis Bro. Bag Co., Minneapolis; B-I-F Industries, Omega Machine Co. Division, Providence, R.I.; Black, Sivalls & Bryson, Kansas City; Burrows Equipment Co., Evanston, Ill.; Butler Mfg. Co., Kansas City; Burlap Council, New York; Chase Bag Co., Southland Packer Division, Chattanooga, Tenn.; Clark Equipment Co., Battle Creek, Mich.; Columbia Steel Tank Co., Kansas City; Combs & Co., Kansas City; Conveyair, Inc., North Vancouver, B.C.; Dodgen Industries, Humboldt, Iowa; Dorsey Trailers, Elba, Ala.; J. B. Ehrsam & Sons Mfg. Co., Enterprise, Kansas; Dave Fischbein Co., Minneapolis; U. E. Fitzpatrick & Co., Warsaw, Ind.; Fairbanks Morse & Co., Kansas City; Hardy Scale Co., Maywood, Cal.; Hayes & Stolz, Ft. Worth; Henderson Mfg. Co., Cedar Rapids, Iowa; Helm Mfg. Co., Ft. Worth; Howe Scale Co., Rutland, Vt.

Jacobson Machine Works, Minneapolis; Kice Metal Products Co., Wichita, Kansas; Kilby Steel Co., Anniston, Ala.; Lander Mill Mfg. Co., Ft. Worth; Mill Engineering Co., Ft. Wayne, Ind.; North American Mfg. Co., Sioux City, Iowa; Orville Simpson Co., Cincinnati; Peerless Equipment Co., Joplin, Mo.; Productive Acres Mfg. Co., Keota, Iowa; Pulverizing Machinery Division, Metals Distributing Co., Summit, N.J.; Ranger Equipment Co., Delphi, Ind.; Richardson Scale Co., Clifton, N.J.; Riza Mfg. Co., Cleburne, Texas; J. B. Sedberry, Inc., Franklin, Tenn.; Sterwin Chemicals, Inc., New York; Streator (Ill.) Dependable Mfg. Co.; Strong-Scott Mfg. Co., Minneapolis; Sudenga Industries, George, Iowa; Textile Bag Mfrs. Assn., Evanston, Ill.; Toledo (Ohio) Scale Co.; Universal Hoist Co., Cedar Falls, Iowa; Wenger Mixer Mfg. Co., Sabetha, Kansas; West Virginia Pulp & Paper Co., Kansas City; Winborns, Williamsburg, Iowa; W-W Grinder Corp., Wichita.

## McCabe Employees Take New Positions

MINNEAPOLIS — Several former employees of the McCabe Co., Minneapolis grain and feed firm which was sold recently to Farmers Union Grain Terminal, have taken new positions, it was announced this week.

Joining the Kellogg Commission Co., Minneapolis, were Charles E. Johnson, William F. Harvey, George H. McCabe and Robert J. Johnson, all formerly with McCabe Co.

O. A. Behmer, formerly with McCabe, has been employed as a member of the Minneapolis Grain Exchange traffic department.

## DRUGS

(Continued from page 7)

ered by the Food and Drug Administration as being in the "new drug" classification; three states, reported little or none being done; one state, did not answer questionnaire but advised it was a problem.

**2. If so, is registration of the mix required?**

Eight states said yes; 27 states, no; two states, require that the company register as a custom mixer; one state, requires mixer to maintain "work order" on all custom mixes.

**3. Is the mix subject to sampling and analysis?**

Twenty states said yes, 16 states, no; two states, sample upon request.

**4. Is registration of the drug required?**

Sixteen states replied yes; 21 states, no; one state, qualified yes.

**5. Do you permit use of less than original package of the drug?**

Thirty states said yes; two states, no; three states, did not answer; two states, reported no restrictions; one state, "cannot control."

**6. Is medicated feed labeling required of the mix?**

Eleven states said yes; 17 states, no; one state, requires statement of formulation; four states, require modified invoice to show each supplement, ingredient and drug; two states, require name and amount of drug on tag; three states, require adequate warnings and directions.

**7. In your opinion, is custom mixing of drugs in feeds being used to circumvent any of your state laws?**

Seven states said yes; 28 states, no; two states, did not answer; one state, did not know.

## Charles A. Geiger Dies

ST. JOSEPH, MO.—Charles A. Geiger, 72, owner of the Geiger Grain Co. in St. Joseph, died Oct. 18 at his home. Mr. Geiger started in the grain business here in 1915 after being in that business in Robinson, Kansas, for a number of years. He also owned grain elevators in Fairfax, Mo., and Bellevue, Kansas, at the time of his death.

## MARKETS

(Continued from page 2)

feeding, but the full effect is not being experienced.

The present time normally is the season for heavy cattle feed booking, with feeders ordering their needs for the next several months. "Exceptionally slow," is the report. The feeder cattle are slow in reaching feedlots this year, and the relatively high price of feeder cattle is thought to be responsible.

Feed manufacturers are operating generally on a full schedule, but on a day to day schedule.

### Pacific Northwest

Feed ingredient prices followed a mixed trend during last week's trading. The over-all demand appeared slightly small and price changes were limited in most cases by the plentiful supply.

Meat and bone meal prices posted another sharp decline by slipping as much as $10 ton while wheat millfeeds lost 50¢ ton with offerings facing a narrow call.

Cottonseed meal and feed barley gained $1 ton while milo listings closed 50¢ higher with suncured alfalfa meal advanced $1.50 in the face of limited offerings and stronger hay prices.

Portland and Seattle mixers reported that formula feed sales average slightly larger than during the previous period with some price adjustments in the cost of high energy feeds following recent sharp price declines for protein concentrates.

Broiler and laying mashes continued to set the pace as far as volume movement was concerned with turkey feeds close behind. Supplemental feeding needs were generally increased by weather-retarded grass growth in most sections of the Pacific Northwest.

### South Central

Formula feeds moved in good volume this week, with a slowly rising trend. Most manufacturers expressed satisfaction with their business, but some indicated that the rate of increase was hardly up to their expectations. They agreed that the gain had been forced by a steady improvement in sales at retail level and not by a build-up in inventories.

Running time of most mills reflected a little better outlet. Reports of an occasional plant adding a sixth day run were heard, and others were operating separate units on an overtime basis.

Heaviest output of feeds was centered in the hog group. The consistent heavy demand for these feeds is termed remarkable. Cattle feed bookings have been heavy and a fair volume has been delivered. A heavy frost would likely result in an increase in ordering. Egg feeds have shown very little of their usual seasonal improvement so far.

### Ohio Valley

Continuing indian summer weather, late fall harvesting activities and plentiful supplies of farm crops combined this week to ease off sales of formula feeds slightly. But manufacturers were agreed that the situation is strictly seasonal, with the long-range outlook expected to develop a business volume that will place this year's tonnages well ahead of those recorded last year.

Heavier receipts of livestock, especially hogs, are continuing at area stockyards, with prices holding up surprisingly well in view of the volume. Some grades, such as calves and feeder and slaughter steers, were moving out at 50@75¢ cwt. higher than a week earlier. This is considered an excellent indication of the capacity of retail markets hereabouts to absorb offerings readily, and a like situation is holding true for eggs and poultry, both of which are holding at steady prices despite ample offerings.

Chick and broiler feeds continue in most demand, with egg settings reported in excellent numbers to meet expected heavier mid-winter retail demands. Formula feed production schedules are holding steady, mostly on two-shift operations.

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